Aalto University
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Strategic Decisions over Innovation in the Finnish insurance Market

The Arrival of Usage-Based Car Insurances in Finland

Master's Thesis
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Abstract of master's thesis

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Abstract

For most insurance customers in Finland, and around the world, price is their main criteria to buy or not to buy an insurance. At the same time, risk management is the biggest challenge for the companies. Usage-based insurances based on telematics technology could provide the customers with a chance to significantly lower their car insurance payments and offer the companies a possibility for very efficient risk management. Car insurances based on the technology are already on sale in many countries, but not yet in Finland. What is argued in this thesis, is that the regulations in Finland have affected the insurance companies' business models which then have affected the competition. This has then led to a situation when it is not necessarily a strategically sound move for insurance companies to strive for telematics despite its possible benefits for them and the customers. Although this is the starting point, the results of this thesis should not just solve this particular problem, but to generate a more widely usable mechanism.

In the literature review of this study subjects of disruptive technologies as competitive advantages, business model innovation as competitive advantage, regulation as an obstacle to business model innovation and the relationship of innovation and imitation are all observed. The theoretical framework created from these subjects helps to understand the findings of this study, and supports the final mechanism presented in this thesis.

To both, find out an answer to the dilemma of the Finnish insurance market, and to create a mechanism applicable for other issues as well, grounded theory was selected to be the basis for the methodology of this study. For data collection seven interviews were conducted with managers who were well informed in the competitive situation of the market and their company's strategy. The respondents represent different insurance companies, and account for almost the whole car insurance market in Finland.

Based on the findings, and what was discussed in relation to the theoretical framework, it was found out that the high level of regulation has molded the business models of the insurance companies to be similar to each other, which then creates competition where the competitive measures are alike. Also, telematics as a concept is outside the companies traditional comfort zone towards ambiguity and legislation, and it might threaten the profitable status quo so the companies are slow to adapt it.

It is then argued that companies should run tests to lessen the level of ambiguity, and to be prepared for sudden changes, create strategic alliances with telematics stakeholders to make imitation more difficult, and finally to diversify away from car insurances to lessen their dependency on that part of the market. It is also proposed that the theory found in this study could be used for example to study the development of the health care industry and the challenges presented by modern information technology in the Finnish taxi-industry and in the area of consumer banking.

Keywords Strategy, Regulation, Innovation, Business Model Innovation, Insurances, Telematics

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Abstract

Suurimmalle osalle vakuutusten ostajia Suomessa ja maailmalla hinta on tärkin tekijä vakuutuksen ostamiseen tai ostamatta jättämiseen. Samaan aikaan riskienhallinta on vakuutusyhtiöiden tärkein haaste. Käyttäjäpohjainen hinnoittelu telematiikan avulla pystyisi tarjoamaan tähän ratkaisun alentamalla huomattavasti vakuutuksenottajien vakuutusmaksuja ja tarjoamalla vakuutusyhtiöille mahdollisuuden hyvin tehokkaaseen riskienhallintaan. Teknologiaan perustuvia autovakuutuksia on jo myynnissä monissa maissa, mutta ei Suomessa. Tässä tutkimuksessa argumentoidaan sen puolesta, että sääntely Suomessa on vaikuttanut yritysten liiketoimintamalliin, mikä taas on vaikuttanut kilpailuun, mistä taas on seurannut tilanne, jossa vakuutusyrityksille ei ole välttämättä strategisesti järkevää pyrkiä kohti telematiikkaan huolimatta sen mahdollisista hyödyistä. Tämä on tutkimuksen lähtökohta, mutta sen tarkoitus ei silti ole ratkaista vain tätä spesifiä ongelmaa, vaan tarjota laajemmin yleistettävä mekanismi samankaltaisiin tilanteisiin muilla toimialoilla.

Tutkimuksen kirjallisuuskatsauksessa tutustutaan, siihen miten disruptiivista teknologiaa voi käyttää kilpailuetuna, miten liiketoimintamallin innovointia voi käyttää kilpailuetuna, siihen miten sääntely vaikuttaa rajoittavasti liiketoimintamalleihin ja lopulta innovaatioiden ja imitaation suhteeseen. Kehitetty teoreettinen viitekehys auttaa ymmärtämään tutkimuksen tuloksia ja tukee lopulta esitettyä teoriaa.

Jotta tutkimus voisi sekä antaa vastauksen Suomen vakuutusmarkkinoille, että tuottaa yleistettävän mekanismin muille aloille, "grounded theory" valittiin lähtökohdaksi tutkimuksen metodologialle. Tutkimuksen data kerättiin seitsemästä haastattelusta, jossa haastateltiin vakuutusyhtiöiden kilpailudynamiikan ja oman yrityksensä strategian hyvin tuntevia vakuutusjohtajia, jotka edustivat eri vakuutusyhtiöitä Suomesta. Haastateltujen avulla saatiin katettua lähes koko suomen autovakuutusmarkkinat.

Tulosten ja teoreettisen viitekehyksen pohjalta tutkimuksessa tultiin tulokseen, että tiukka sääntely vaikuttaa liiketoimintamalleihin ja sitä kautta kilpailuun. Telematiikan ylittäessä yritysten perinteisen sietokyvyn epävarmuutta ja lain rajoja kohtaan, ja sen uhatessa tuottavaa nykytilaa, ovat vakuutusyhtiöt siirtyneet hitaasti kohti uutta teknologiaa.

Lopulta tutkimuksessa argumentoidaan, että yritysten tulisi tehdä testejä vähentääkseen epävarmuuttaan ja ollakseen valmiita tulevien muutosten varalta. Lisäksi yhtiöitä neuvotaan muodostamaan strategisia yhteistyösopimuksia telematiikkaan ja autoilun tulevaisuuteen liittyvien tahojen kanssa parantaakseen kilpailuasetelmiaan, sekä lopulta vähentämään riippuvuuttaan autovakuutuksista. Tutkimuksessa todetaan myös, että sen tulokset saattavat olla hyödynnettävissä esimerkiksi terveysalan kehityksessä, suomalaisen taksi-alan murroksessa sekä kuluttajien pankkialan digitalisoitumisessa.

Keywords Strategia, Sääntely, Innovaatiot, Liiketoimintamallit, Vakuutukset, Telematiikka

Table of Contents

List of figures

List of tables

1. INTRODUCTION

1.1 Research motivation and research gap

”Gosh, I hate insurance companies!” is a sentence I hear every now and then when I tell people that I used to work for an insurance company. Usually when asked “why?” the people give answers like “they take money from me, but never pay me anything!” or “I do not know. For some reason however, they just annoy the living heck out of me!” Even for the people giving the latter, less precise answer, their dislike towards insurance companies usually stems from money, and the fact that they have to give up some amount of it in regular intervals to their insurance companies.

Pricing customers as little as possible is a long-time dilemma for many industries, but especially for the insurance industry. Ferguson et al. (2003) state, that it would in fact be impossible for insurance companies to charge sustainable rates from their customers: on one hand the customers would deem this “one-price- for all” insurance too expensive and on the other hand the government would put pressure on insurance companies to lower the prices. When forced to lower the price under a sustainable level, the insurance companies must take advantage of customer selection to the highest degree possible. They calculate risks the best they can, and so those deemed to be less risky will get lower insurance payments and those deemed to be riskier, will have to pay a larger amount to compensate their higher risk of an accident. On average this is fair: an 18-year old BMW driver is probably a riskier driver than a 40-year old Kia Rio driver. Firstly, because the 18 years old has less driving experience, and secondly because his BMW has a more powerful engine and is statistically more accident prone. As said, on average this is true, but not necessarily on an individual level. Why could not the Kia Rio driver be the speeder and the young BMW driver a slow driver driving only on weekends? More importantly, none of the car insurance customers can really affect their insurance payments by driving less or better.

These questions are now more relevant than ever in Finland. Telematics devices, which can monitor how, how much and where a car is driven, have become common and cheap enough, so that they can be used to track customers and send the precise information of them to the insurance companies, so that insurance prices can be more individualized. Insurances based on telematics-devices are already sold in many countries across the

globe, including the US, the UK, Switzerland and Italy to name a few. Nevertheless, no insurance product based on the technology is yet to be sold in Finland.

From literature there is no clear answer to this. There are studies about usage-based car insurances from single companies, most notably a case-study from the Progressive insurance company by Desyllas and Sako, (2013), but no studies on any of telematics insurances in Finland. Matti Pohjola (2015) has studied the digitalization of financial institutions, but he too does not address the concept of telematics-based car insurances. From literature we can derive context on why companies might be hesitant towards innovation. For example authors like such as Porter (1985) or Mcafee et al. (2012) have written about using technologies as competitive advantage and authors like Teece (2010) or Kim & Mauborgne (1999) have made theories on business model innovation, which helps to understand how to best take advantage of new technologies. Herzlinger (2006) and Hwang & Christensen (2008) have explained how for the health care industry embracing innovations can be difficult and even a non-profitable action. Authors such as Liebermann and Asaba (2006) or Semadeni & Anderson (2010) have illustrated how companies deal with choices of imitation and innovation. Putting literature like this together, can give us a good perspective on why companies might be hesitant to embrace innovations and change their business models. However, if these writings are compared to the writings of Desyllas and Sako (2013) or for example Karapiperis et al. (2015), insurance industry would not seem to hold many restraints introduced in those writings. Instead, it seems like a perfect market for new innovations, with its high level of competition and need to increase customer value, which is why the Finnish insurance market needs to have a closer look. The literature explains the choices companies have to make in terms of new technologies, but it does not explore the role regulation can have in the business model creation and competition dynamics. This is where the research gap lies.

1.2 Research Implications

From the research gap, rises the research question of this study: “how slow-moving or traditional industries and companies react on disruptive technological advancements?” “Slow-moving” and “traditional” mean in this context companies that slowly move towards technological advancements in their offerings, or try to hold on to the current state of the competition, keeping the advancements as still as possible. The question is formulated without the word “insurance” because although the question is looked through

the lenses of the Finnish insurance industry, and its decision-making process over the telematics-industry, the purpose of this study is still not just to solve this particular problem of telematics insurances and the Finnish market, but to be applicable to other industries and businesses as well. In other words; studying this topic through the lenses of the Finnish insurance market will give us a mechanism that is more widely applicable, and explains, not just this particular situation, but many others, where regulation plays a role in defining business models and competition. To some extent the theory generated in this thesis can be applicable to industries where other barrier of entry than regulation has created a profitable state of competition in the market.

What was discovered in this study was that basically all companies face questions on how to use innovations for their advantage. Many times innovating first is not necessarily the best way to do that, but to wait for others to do it first and then to imitate those companies. To fully take advantage of the new innovations or technology, business model innovation is needed. Then again, regulation can have a strong impact on how the business model has been built. Interviewing the respondents of this study, seven well-informed insurance managers representing basically the whole Finnish car insurance market, it was found that the regulation does not even have to be too restrictive to affect business models, as long as it has an initial impact on how the business model was built, and is perceived as restrictive. From these findings a mechanism was found: when regulation affects business models and then the form of competing, and when the situation is mostly profitable to its participants, there is very little incentive for the companies to embrace new innovations as that might unbalance the profitable status quo of today. Although this strategy was deemed as sensible in this thesis, some actions to secure the insurance companies' future are recommended in this thesis. The mechanism found is seen as applicable to the Finnish insurance market and other industries with strict regulations, but possibly also on markets with other high barriers of entry and a profitable competitive situation.

The solving of the research question of this study meant solving some sub-questions as well. The first of the sub-questions is "How are the business models of regulatory bound companies constructed?" As was found out, the regulations force the companies to create similar business models, emphasizing the same processes, differentiation and underlying logic of the company.

The second sub-question is “How does the similarity of business models affect competition?” As the business models are similar, so seem to be the competitive measures as well. When the competitive situation is beneficial for the companies, they have very few incentives to use innovations as competitive measures in order not to disturb the competition.

And finally “How do slow-moving companies react to the innovativeness of their competitors?” When the companies are benefitting from the status quo, this leaves them to a situation where they are hesitant to use innovations themselves, but they must be alert on the actions of their competition or outsiders in order to be able to imitate. As is found out in literature, imitation is not however necessarily any easier than innovating, leaving the companies with much ambiguity towards the future, even if they decide to favor imitation over innovation.

1.3 The outline of the research

After this chapter, we will take a look on the literature available on the subjects of innovation vs. imitation, disruptive technologies as competitive advantages, business model innovation as competitive advantage, and regulation as a limitation to business model innovation. The purpose of the literature review and the theoretical framework is to provide theoretical lenses, through which we can look the issues at hand. To understand what we know about the subject at hand, before discussing the findings of this study. What was found in the literature review was firstly that to efficiently monetize new technology, at least some business model innovation is needed, since what happens around the new product based on the technology is more important in that sense than the actual technology. This notion is supported among others by Mcafee et al. (2012), Constantinou and Kallinikosis (2015) and Porter (1985).

Knowing that other activities than the technology itself hold great importance in taking advantage of the new technology, business model innovation was then studied. From the literature studied there, we could conclude, that in business model innovation uniqueness is the most important factor: a company can try to escape the current competition by either finding hidden or creating new customer value through business model innovation. This notion was supported by the writings of Teece (2010), Kim and Mauborgne (1999) and Chesborough (2010) among others.

From these points it can be concluded, that when innovation matches customer value well, and when a company is in a highly contested market, embracing innovation would seem like a good choice. However, we know that at least regulation can be a strong force affecting company embracing innovations or business model innovation, which is why the topic of regulations affecting business models was discussed. What was found from Hwang & Christensen (2008) and Herzlinger (2006) was that in the health care industry strict regulations protect profitable business models from disruptive technologies. In the health care industry the strict regulations are made to protect the public, but the regulations can sometimes be unintentionally restrictive too, as stated by Paraskepolou (2012). Lucas and Goh (2009) also brought up, that companies with much less or no regulatory protection compared to the health care industry can be very protective over their old profitable business models when facing disruptive technologies.

To some extent, what was learnt in the regulation part of the literature, explains why companies might not embrace innovations, but the literature in that part does not explain the difficult choices companies need to make when their competitors decide to innovate, which is an important aspect in competition dynamics. This is why we then look on literature about innovation and imitation. We start this part by Schumpeter's (1950) classical notion on creative destruction. We then specify this through the writings of Aghion et al. (2001) and especially on their theory about how the incremental rates of innovation are more important than the individual rates of innovation against imitation. Liebermann and Asaba (2006) explain two different types of innovation they have found and Pepall (1997) continues on how the innovator can protect from imitation. Semadeni and Anderson (2010) introduce the follower's dilemma explaining how both imitating and not imitating can have deep consequences for a company. Jenkins (2014) supports this by highlighting the difficulty over the decision on imitation. Finally Teece (1986) explains how imitator might sometimes be more successful than innovator. Using all this information Figure 1 was drawn to illustrate the difficulties the companies face when they have to decide between innovating, imitating or doing nothing.

After exploring all this literature it was possible to create a theoretical framework, which is illustrated in Figure 2. With the help of the literature synthesis we can understand, that companies with profitable business models alongside with regulatory protection, can have great resistance towards embracing innovation. Then again, this is not the whole part of issue, but it should be noted, that for companies where the regulation is not actually too

strict, but has affected the form of the business model, it is more plausible that their current competitor or a third party engages innovation in their field of business, which means that that kind of company should be ready to make decisions over imitation even if it is not ready to innovate itself.

Before moving on to the research itself, it was important to have a look on the literature about insurance companies and insurance business in general. This was done in order to highlight what makes the Finnish insurance field different to its foreign counterparts and to understand some basic and universal principles of the business. From the writings of Bickley (1967) and Ferguson (2003), we can get that risk management and price setting are very important and classical problems for insurance companies. Karapiperis et al. (2015) and Desyllas and Sako (2013) then again explain, that telematics based car insurances can be a solution to these problems and provide the customer value much better than the older car insurance products. From the articles of this part of the study we can also note, that consumers and managers across the globe share similar fears and ambiguity towards the new technology. Still the fact is, that the technology is in use in the US for example but on in Finland. Later, as we get to the results of the study, we can note, that there are differences between Finnish and foreign markets in terms of market size and customer volume for example, but clearly the biggest difference is the regulation and the competition dynamics.

After going through the literature synthesis and the literature about the insurance business, we will explore in the methodology chapter: how, and for what reasons, was the study conducted the way it was. After this, we move on to discover findings and the different categories that emerged from the data through analysis and coding.

After exploring the findings, we will discuss the relation between the findings and the literature synthesis. We will find that the answer to the research question explains that for some companies and industries, tight regulations mold the business models for certain shape, which then makes the competitive measures alike for all the companies in the industry. If this competition dynamic is profitable, there is little incentive for the participants of the market to shake the profitable status quo. We will also shortly discuss some advice to the Finnish insurance companies, on how they should move forward with the information provided in this thesis. It will also be explained how the theory that has

been created in this study is applicable to other circumstances as well. Finally, the thesis is concluded.

2. USING NEW TECHNOLOGY AS A COMPETITIVE ADVANTAGE

Even if a company decides to innovate, it needs to know how it will use the technology to its advantage. Disruptive new technology, meaning any new technology that better helps to offer customer value by radically changing the way an industry or a company operates, can be a powerful tool in competition, but it needs to be used properly as well. Today, new technologies are not just something that would come in steady intervals, but the whole global business environment is changing, and all companies need to be ready for this as well. One example of this ongoing technological change is information technology brought by digitalization. A new form of technology based on this development are the telematics-based car insurances.

According to Miles (1989), companies of the 21st century need to be more flexible and faster to change than their predecessors. He sees, that the accelerating pace of the technological progress means, that competition everywhere has become tougher and more global. No company, according to him, can escape this change, and should be prepared for it in order to survive. He sees, that the companies of today need to be especially prepared to change their organizational structure to meet the needs of today.

Information technology, has according to Contantinou & Kallinikos (2015) been a way to create competitive advantage for companies for a long time now, providing possibilities for disruptive technologies. However, previously the gathering of the data has been more static then it is today: the information has been updated in certain intervals (for example each quarter) and there has been less of it available. Older theories about information technology in general are useful when trying to understand on what premises companies have acted before, but to understand how they should or might change their current strategies because of the new information technology we should take a closer look on theories about the current possibilities of the disruptive technology emerging from information technology, or in other words: big data.

McAfee et al. (2012) describe big data as analytics which is unique in its "volume, velocity and variety" meaning that there is more information available than ever before, with higher speed and more accurately, and that data can be collected from various different sources. However, Davenport (2014) then again finds it more difficult to accurately describe big data and even finds the term somewhat misleading but sees it nevertheless as an "umbrella-term for new massive data types that have emerged in the last decade". Both McAfee et al. and Davenport (2012,2014) see big data nevertheless as something that will have a profound impact on businesses, implying to its disruptive nature.

Big data is not just a new version of data analytics but it is something that defines a new completely new era, where data analytics can have rigorous impact on business decision making (McAfee et al., 2012). McAfee et al. (2012) also found out in their research that overall performance of the firm improved when they embraced the change to data-driven market compared to those firms which did not state to be data-driven. So how can companies use this change to their advantage? McAfee et al. (2012) list five different challenges a company must address, before it can gain full benefits of being a data-driven company. Firstly, having more or better data does not cut it, but "human values" such as vision and human-insight (leadership) is required. Secondly, skilled data scientists are needed to process the new influx of potential information. Thirdly, the new technology that has emerged to analyze the data is not sufficient at its own, but needs skilled workers to use it. Fourthly, the organizational structure must be modified so, that the right people get to use both the available new data and the people who can analyze it. Finally, the corporation must change the way it thinks.

The human-side of big data is supported by Thomas Davenport (2014) and Alnori Bhimaan too (2015). The main point for all of them concerning that is, that big data by itself does not create value but it needs to be properly used, to harvest all the available value. Davenport (2014) goes as far as to predict that managers will still use their "hunch" with big data available, as they have mostly done so with modern analytics available as well. What this means is, that although big data provides tremendous possibilities for managers it will not take away their job: managerial decisions are still extremely important and human aspect has strong meaning in creating value. To use an analogy: there is a new tool available to create a strategic advantage but to get the advantage one needs to actually use the tool.

Constantinou & Kalinikosis (2015) emphasize the real-time nature of big data and the importance of choosing the right numbers to analyze. They note that one should be cautious when using big data to modify the company strategy. Although they do not say it directly, what they mean is similar to the other authors we have discussed; the human-aspect matters significantly when using big data, both in business operations and in creating a new strategy. As we already stated: big data is not a solution to generate a new strategy but rather a tool for it. Related to strategy-creation, Constantinou & Kalinikos (2015) note, that as big data with its massive volume and timeliness differs significantly from the data that has been used previously for strategy making, it cannot be used to create new strategies with the old methods. This is an important point concerning the topic of telematics insurances. For example traditional insurances are based on proxy-factors gathered from the customers as he/she buys the new vehicle. Big data (telematics) based insurance then again, is not based on one-time information but to a constant (or a long time) influx of massive amount of information. Surely old strategies need to be changed in this case as well.

In his book "Big Data at Work" Thomas Davenport (2014) brings up not only the possibilities of big data in company operations but also its use in creating new offerings. He mentions how LinkedIn has managed to use big data in both customer acquisition and retention and brings up Google, Netflix and Kaplan as success stories too. Davenport (2014) sees these companies as examples in that in order to create a successful big data-based product or service, the technical side needs to work together with product development and marketing. Bhimani (2015) adds to this, that the customers will also have an important role in developing the big-data based products, since the products or services are based on their behavior. In short: we need to concentrate on the business and managerial actions instead of too much on the product itself.

The authors also remind of the short-term nature of big data. According to them big data is something that tells much about the present, but might not tell us what we need to know in order to determine what is going to happen in the future. Taken into account what we have discussed earlier, it would seem, that this is a question of management and human capabilities again. Constantinou & Kalinikos (2015)

Even before big-data was even introduced as a concept, Porter & Millar (1985) already stressed the possibilities of information technology in creating a competitive advantage,

and noticed how it can affect all the "five forces of Porter" meaning "bargaining power of suppliers", "threat of new entrants", "bargaining power of buyers", "threat of substitute products or services" and "rivalry among existing competitors" (Porter & Millar, 1985). Not just information technology in general but big data technologies are sure to affect all these forces as well. We noted already, that big data enables companies to create new services and products. These are sure to affect the rivalry among competitors, threat of new entrants and the threat of substitute products or services. The authors of big data do discuss its implications on the overall value chain of a company, which would match with the powers of suppliers and buyers. When Porter (1985) advices the companies to use information technology, he emphasizes decision-making and the analysis of the new technology. This correlates to what the big-data authors wrote about the human side of the implementation. The new technology by itself does not mean instant success, but to get full advantage of it, the right managerial decisions are crucial.

Outside forces affecting the company (Porter, 1985)
•Bargaining power of suppliers •Threat of new entrants •Bargaining power of buyers •Threat of substitute products or services •Rivalry among existing competition
Changes inside the company (McAfee et al. 2012)
•Leadership (management) •Data Scientists (employees) •Skilled workers (employees) •Organizational structure •The way of thinking in the organization

Table 1: How disruptive technology (big data) forces business model changes (McAfee et al. (2012) and Porter (1985))

Looking at the Table 1 above, one can understand that disruptive technologies (such as big data) can affect every part of a business. If new information technologies affect every side of the Porter's five forces as stated by Porter (1985) for a company, it is easy to imagine that for that company to succeed, it does eventually need to take actions in those area that McAfee et al. (2012) listed, which can mean significant reorganizing. It seems, that no matter whether are you introducing new disruptive technology or your competitors has

brought the disruptive technology to the market, you will need to make big changes to your organization. This is what leads us to the next topic of business model innovation.

3. BUSINESS MODEL INNOVATION AS A COMPETITIVE ADVANTAGE

As we learnt, to fully take advantage of an innovation can mean profound impact to the whole strategy of a company. To change the strategy of a company means changing its business model: a concept which Teece (2010, p. 172) names as "the business logic required to earn a profit". Business model innovation means then making fundamental changes to this logic.

Teece (2010) sees, that because of the advancements made in communications and computing technologies consumers now have more options than ever, meaning that their needs and alternatives are various. According to him, without a good business model a company is unable to address the needs of the customers or fully monetize on their offering(s). Teece (2010) points out, that firms might be completely unable to benefit from new product or service innovations without proper business model innovation. Business model design and strategic analysis are according to him – "vital" for a new innovations success.

To make a business model work, it should not be just a "logical way of doing business", but also created so that it answers the customers' needs. Also, the model should be hard or impossible to replicate for others. This does not necessarily mean strong intellectual property rights, but can also mean the difficulty of organizing supplier-chains or relations with alliance partners. (Teece, 2010)

According to Kim and Mauborgne (1999) companies in established industries tend to match their strategies, because they see that "this is how we compete in our industry or strategic group". They note, that the more the companies rely on competing in these similar strategies, the fiercer the competition, leading the companies to compete in cost or quality

or both. However, the authors see too, that companies can generate value by looking value beyond the conventional boundaries of competition. This notion is exactly the reason, which provides the possibility for business model innovation. Matching strategies might feel, and can actually be, safe for the company and its shareholders but that might prevent the company from looking outside the box. Engaging in business model innovation might provide a company a chance to get out of the fierce competition of cost and quality that strategy matching generates.

Firstly, Kim and Mauborgne (1999) suggest companies that want to find this "external value" to look across substitute industries: to see who they are really competing against. For example, a taxi company is not competing against other taxis but against trains and buses too for example. The main point in looking across substitute industries is to understand the customers and to see what they really get out of the product: what is the value to them in using the company's offering? Teece (2010) notes too, that when evaluating a provisional business model ("provisional" in the sense, that all business models can be argued to be eventually displaced by another, more suitable model) a company needs to look for "competitive offerings" and "how the product offers a solution to the customers' problem?" Both of these notions are similar findings then those of Kim & Mauborgne (1999).

Secondly, companies should look "across strategies groups within industry" (Kim & Mauborgne, 1999). This means, that companies should look on what dimensions do they compete in their respectful strategic group at the moment, and how they could change the weighting of those dimensions. In general these dimensions can be categorized into two: price and performance. Kim & Mauborgne (1999) mention for example price and fashion in clothing industry and price and quality in car industry. Perhaps for insurance industry this could be a question of price and customer service. The better the customer service, the happier the customers are to deal with their insurance company, but the costlier their insurances are too. And this works the other way around too: the poorer the customer service the cheaper the insurances can be because of savings in employee costs.

Thirdly, companies should look to chain of buyers (Kim & Mauborgne, 1999). The point is to make distinction between purchasers, users and influencers. By simply concentrating on one group or segment, the company risks of overlooking a big part of its possible customers. That is why companies should see who really are involved in the buying

process. For insurance companies (in terms of car insurances) an influencer could be the purchaser's fiancé, or the car dealer. The user of a car (the one bringing in the risk of an accident) might then again be in reality someone else then the purchaser too, for example the child of the purchaser who can be more risk-prone then the purchaser him/herself.

Fourthly, companies should seek for "complementary product and service offerings" (Kim, Mauborgne, 1999). This means that the product or service is not necessarily the only aspect that the customers seek when buying. They mention as an example the Borders and B&N book store, which understood that buying books is not the only aspect that the customers seek from a bookstore, but actually they wanted a reading space and good customer service as well, both of which are aspects that used to lack from an American bookstore. For insurance companies this might be about safety in general: people might call the insurance company for problems that are not necessarily the company's concern, such as problems when travelling, or issues about building a house for example. Offering a service, where customers could call on technical or practical issues before anything actually happens might prove to increase customer satisfaction and the amount of damages. Teece (2010) too advices companies to look for competitive offerings and to see how our offering is (or should be) superior to those.

Fifthly, companies should look "across functional or emotional appeal to buyers" (Kim & Mauborgne, 1999). The authors note that a company can sell its product from a functional perspective or an emotional perspective. For example cosmetic companies can sell their products with the emotional appeals of beauty, hope and dream. However, sometimes it might be beneficial to move away from the usual industry-wide appeals, as it was for Bodyshop as it moved away from the said appeals of cosmetic industry. The authors also mention how the British insurance company Direct Line moved away from traditional brokers to focus on cost savings via information technology. Although this makes dealing with the insurance company less personal, it also save the customers money as their premiums get lower. If money (functional appeal) and not the personal relations (emotional appeal) is the main concern of the insurance buyers, then both the company and the client can benefit. Teece (2010) advocates on looking and understanding on what grounds do the customers actually use the offering as well. He advices the management to ask themselves, how their product solves the customers problem.

Finally, companies should according to Kim & Mauborgne (1999) "look across time". This means that they should try to see what trends affect their industry and change their value curve accordingly. The authors note however, that this might be easier said than done, and give three conditions which are critical in forming a new value curve according to future trends. Firstly, "the trends must be decisive to your business", secondly "they must be irreversible" and thirdly "they must have a clear trajectory". Big data and digitalization could fulfill these three conditions for the insurance industry in Finland: as we will discuss later in this chapter, it has meaning to their business. The changes are most probably irreversible as we have not taken full advantage of the current technology which is still rapidly advancing all the time. Also, as we learnt from the big data articles, we know that there is more and more information available cheaper than before every day.

Amit and Zott (2012) see three different ways business model innovation can occur: focusing on novel activities, focusing on linking activities in novel ways and making changes in governance. The biggest difference between their model and that of Kim & Mauborgne is that Amit & Zott (2012) focus more to the novelty factor of the business whereas Kim & Mauborgne (1999) proposed to look how the business functions at the moment and try to find "empty space". To a high degree these two approaches naturally overlap. Looking at the current business model, finding gaps is essentially the same then trying to come up with something novel: in order for an idea to be novel it naturally needs to be something that has not been done before.

What Kim and Mauborgne (1999) suggest is that a company should look for certain aspects in their business, find hidden value and change their business accordingly. If it is this simple (just to have a look) why do most of the companies in a selected industry still stay where they are? For example, how come the Body shop (an example by Kim & Mauborgne, 1999) was able to capitalize on the hidden value in cosmetics industry, but the other players did not come up with it, although many of the big players in the cosmetic industry had longer experience of the industry then the Body shop did?

In their article, Sarasvathy and Dew (2005) answer those questions. What they argued in their article is that whether or not a new market is born, is dependent on the stakeholders of the company. They must see that the proper action for the company is to take new means to develop the business instead of redefining the old. The first main issue is to understand, that it is difficult or even near impossible to define consumer tastes before the new market

creation since, they will evolve with the product. So basically what they say is, that the creation of a new market cannot be based on demand, because the said demand is in fact abstract, and assumed meaning it does not exist until the new market has been created. In a way this argument can be seen in contrast with Kim & Mauborgne (1999) since their article can be understood as finding demand where others have not found it. Then again, Kim & Mauborgne (1999) do bring up many times in their article the concept of value creation or value finding, which can be understood in the sense that one does not necessarily look for demand but where extra value can be given and then the demand follows.

The second main issue for Sarasvathy and Dew (2005) is that they see, that a company cannot first interpret customers' hidden needs and then develop technology that matches these needs, because customers' needs are so ambiguous that they will change anyway or be difficult to interpret beforehand. In other words: a company cannot just analyze customer needs and then bring a product to the market matching that need, thinking it succeeded because of the analysis. In fact, the new product might be successful because the customer needs evolved after the product launch. This idea is relevant, because it makes us better understand why new market space is being created. Other cosmetic firms than the Body shop did not necessarily leave their business model as they had always been just because they were afraid what their customers might say, but because convincing their stakeholders would have been too difficult. This is easy to understand: consumers are only one group of stakeholders. Shareholders might see it risky to invest in a new business model that has no guarantee of success when the current business is doing well. For the Body shop then again, the whole formula for success was to be different than the others. If an investor believed in the Body shop from the beginning, they needed to believe to the new business model too.

O'Connor & Rice (2012) take the idea of changing customer perceptions even further by suggesting that it is actually something that the company should actively strive for itself when launching new technology. They emphasize that the market creation requires as much time as technical development of the new technology. They see, that market creation is the result of creating applications for technology, "discovering business model", "stimulating value chain", "priming the market", market entry and managing the market evolution. Overall, these activities are in line with the theories we have discussed earlier. Creating new markets or using new technology to do that, means that one needs to do

changes in the existing business model or at least consider its revisal. O'Connor & Rice (2012) nevertheless emphasize that the learning with the new technology is continuous process and not linear. This means, that there is no pre-determined "road" one could follow, but instead the new technology and the new market will be generated all the time, beginning from technological development and still continuing at customer feedback.

Whereas O'Connor & Rice (2012) see the development of technology and business model with equal importance, Chesbrough (2010) then again, writes that business model innovation might be more important than the advancement of the technology. He too sees, that overall in strategic literature there is a strong bias towards action over analytics – the firms are more creators then users, when it comes to new markets and business model innovation. To Chesbrough (2010) firms are more experimenting with their new business models then implementing them. However, business model innovation and experimenting affects many parts of the company business (selling, producing, financing…) so experimenting can be difficult. Not to mention that many times experimenting means balancing between the old and the new business model. It is easy to imagine, that experimenting with new business models, or changing the business model completely is even harder for larger companies with established corporate structures based on the old business model. This is similar situation to what we discussed earlier about the Body shop example presented by Kim & Mauborgne (1999). Even if the old cosmetic companies saw hidden value where the Body shop saw it too, it might have been too expensive for them to go and test it. To be able to test new business model efficiently the companies must be open to business model innovation. Also, although Chesborough (2010) as well as O'Connor & Rice (2012) stated that it is impossible to know beforehand what is going to happen with the new business model, it is possible and should be studied what starts to happen after the model has been taken into use. The main point for Chesborough (2010) is, that predetermined models will probably fail, but if a company has an effectual attitude towards business model innovation, leadership committed to business model innovation and it pursues data driven planning with business model innovation it is possible to create a successful new business model.

Chesbrough & Rosenblooms (2002) study on Xerox's spin-off companies, clarifies Chesbroughs (2010) later study. Although initially Xerox set the spin-offs to do business with the same business model as what the mother company had used itself, the spin-offs nevertheless used business model innovation successfully. Chesbrough & Rosenbloom

(2002) make a distinction between corporate strategy and business model: according to them there can be one corporate strategy but several business models in the same corporation. To them the difference rises from customer value, which is more of an issue with business model creation then with corporate strategy creation. This makes sense, when one thinks about a corporation with a parent company and many subsidiaries. The purpose of a corporation is usually to maximize the value of shareholders. To do this however, the company needs a working business model. An important part of a business model is the customer value proposition which might differ from subsidiary to subsidiary. The company might be for example in an industry such as the food-industry, where customer value can differ significantly from country to country. Also even if the corporation as a whole sells to only a few large clients, the need of those clients might differ from each other again. So the point is, that the corporation does not necessarily have to compromise its corporate strategy because of the pressure to its business model, but the business model should be flexible.

The importance of flexibility arose from the results of Chesbrough and Rosenbloom (2002) too. All of the spin-offs they studied had changed their business model from the initial one that was chosen. What the authors actually note is that the initial business model is not actually a strategy but "an initial hypothesis" for customer value proposition. In subsidiaries of their study, where the business worked the best, there was an ongoing strong connection between the clients and the company. As we have discussed earlier with other authors too, the customer value cannot be seen beforehand, and it does not necessarily even exist beforehand. The company usually creates this new value, and must therefore observe intensely how the value turns out to be or develops throughout the co-operation. One important aspect of Chesborough and Rosenbloom (2002) study is that those spin-offs that failed, had equally promising offers than those that succeeded, what those firms failed to do according to the authors was, that they did not modify their business model enough as time went on. The authors note too, that with new and smaller firms, business model innovation is more common and more expected then with established companies.

Sometimes business model innovation can mean taking a business model from one industry to another. As processing power of computer increases (as suggested by Moore's law) exponentially, business model innovation is more and more related to advances in computing technology. As computers become more capable, there are more applications

for them and so the customers will need them more for their day-to-day tasks, in other words computers will become (if they already are not) a necessity, to which a utility business model can be used (Rappa, 2004). A utility business model can be applied for example to water consumption, where the customers can pay per every liter they consume. However, now this business model, thanks to developed computing technology, can be applicable to some computer based business models (Rappa, 2004). Although Rappa (2004) explains the "future" utility-business model through software, which was previously licensed, but could now be acquired through subscription, one could possibly see telematics insurances from this utility-perspective, as the customers pay according to their own usage.

Teece (2010)	Kim & Mauborgne (1999)	Amir & Zott (2012)
• Make The business model difficult to replicate • Alliances • Patents • Look on what grounds the customers acutally use the products • Look for competetive offerings • Look for the customer value in the offering	• Look across substitute industries • Look across strategy groups within industry • Make distinction between purchasers, users and influencers • Seek for complimentary products and services • Look across emotional and functional appeal to buyers • Look across time	• Focus on novel activities or/and • Focus on linking activities in novel ways or/and • Make changes in governance

Table 2: How to engage in business model innovation? (Teece, 2010. Kim & Mauborgne, 1999. Amir & Zott, 2012)

The advice given by Teece (2010), Kim and Mauborgne (1999) and Amir and Zott (2012) is mostly compatible to what Chesborough and Rosenbloom (2002), Sarasvathy & Dew (2005) and Chesborough (2010) wrote on the analyzing of business model innovation. The latter group emphasizes somewhat more on value creation instead of finding value, whereas for the first group it is the other way around. Nevertheless, the unifying concept here is uniqueness. Whether it is finding value or creating it. Business model innovation is

about the uniqueness of the offering it creates in the way that it has little competition, and hopefully also in the way that it is difficult to copy by the competition.

So what if there is a brand new technology that offers value in a unique and increasing way for the customers? What if that happens in a contested market offering a chance to escape the rigorous competition? What reasons could a company have to decline the opportunities that the technology offers for successful business model innovation at that point? One reason could be regulation, which relationship to business models is a topic we will cover in the next chapter.

4. REGULATION AS A LIMITATION FACTOR FOR BUSINESS MODELS

One industry, where demand and costs are so high that for some the services remain inaccessible, is the health care industry. According to Hwang & Christensen (2008) one of the reasons why new disruptive technologies alongside with business model innovation have not been adopted or have been adopted slowly by the health care industry is the regulation around the industry, meaning laws and decrees limiting new innovations. The writers argue, that the regulation is made so, that it favors the status quo of the business so that a disruptive change would not "jeopardize public safety for higher profits" (Hwang & Christensen, 2008) Nevertheless, although the regulations are written with the good intention of protecting the public, the writers see, that those who profit from the current state of things the most also lobby the hardest to keep them as they are. This limitative regulatory factor towards innovation has according to the authors lead to a high cost model of health care, where the efficiency and quality of treatment is not necessarily on the best level. (Hwang, Christensen, 2008). Although the authors do not state it directly, it can be intervened, that when the costs get higher so too the barriers of entry for the business. This surely increases the incentives for the larger profitable companies to keep up the status quo.

Herzlinger (2006) writes, that sometimes regulation might in fact favor innovation adaptation. For example she mentions drugs which are created to cure rare diseases. In the case of rare diseases, the cure might be unknown and hard to find, so the government wants to subsidize the adaptation of innovation for these. Then again, many times the

legislation hinders the progress as she points out. She notes, that there is a political side to this as well. Politicians, according to her, face a greater risk in their personal approval rates, if they are under regulating a harmful drug, than if they are over regulating a non-harmful drug (Herzlinger, 2006). This resonates well with what Hwang & Christensen (2008) wrote. If the largest operators in the market benefit from the status quo and lobby towards preserving it, and at the same time politicians risk to lose their approval rates by under regulating, the incentives to impose strict regulations are very high.

However, despite the fact that regulation has a strong impact on how the companies can innovate and that the policymakers are the only ones who can change the regulations and do not necessarily want to do that, this does not mean that the companies would be helpless according to Herzlinger (2006). She sees, that the companies can try to take advantage of the current state of things by recognizing the forces affecting it. These are firstly, the different players in the field. Secondly, generating sufficient funding. Thirdly, understanding the policies and policy making. Fourthly, understanding and adapting the technology involved. Fifthly, understanding the customer value; although the larger companies might enjoy status quo, and the policy makers do not want to take risks on "too loose" medical regulations, the customers would welcome new, more efficient and cheaper processes. Finally, accountability needs to be understood; embracing innovation in medical field, does not mean, that the company should take unnecessary risks. (Herzlinger, 2006) What Herzlinger (2006) tries to say with this guidance is that although the regulation strongly affects the way companies can embrace innovation in medical field, it does not mean, that it inhibits it altogether. It sets the boundaries, which in this industry are stricter than in some other, inside of which the companies can still innovate. She also sees, that there already are companies which have embraced innovation or business model innovation in the medical field, but that the strong regulation among other obstacles explains why the change in medical industry has been so slow. (Herzlinger, 2006)

As mentioned, when a business is strongly regulated like the medical industry, and a company profits from the status quo, there is little incentives from profits perspective to invest in disruptive innovations. By very definition disruptive innovations and business model innovation are made to produce value from a new set of issues, meaning not to maximize the profits from the current business, but to change the existing business altogether. This raises a question: why are the larger companies so satisfied with the status quo, even if it is profitable for them, if disruptive technologies are more about future

profits than current ones? Von den Eichen et al. (2015) mention corporate culture as an issue which causes business model innovation to fail. They note for example that economic rationality and job insecurity can cause mixed feelings towards business model innovation in a company but also more ambiguous issues like self-esteem. The authors note that the company needs to be "confident" in striving towards business model innovation (Von den Eichen et al. 2015). Surely, when we discuss larger established and profitable companies in a field that is strongly regulated, we can agree that they are confident towards that business: they know that the company will keep on generating profit, while simultaneously being protected from competition with the regulation. Conversely, these actors are certainly less confident towards the more ambiguous new way of doing business.

The dilemma in this can be seen already from the advice that Von den Eichen et al. (2015) give to companies to overcome the cultural barriers for business model innovation. Firstly, the authors argue that the companies striving for business model innovation should understand, that the new business model "might follow a different path then the current business and need different guidance or people" (Von den Eichen et al. 2015). From a perspective of a large corporation described by Hwang and Christensen (2008) this advice does not sound too attractive; why should a company, which has a strong market position and is profitable to invest in something, which completely shakes the current state of things, risking both the favorable position and revenue-stream of the company.

The second advice from Von den Eichen et al. (2015) is that the companies should "avoid debilitating frictions in the existing departmental cultures". They note that in order to avoid cannibalization of the old markets, they need to create separate units with independent cultures. Again, to shaken up the current state of profitable business just to embrace new disruptive technology seems like something that could almost sound like creating anarchy for some leaders.

Regulation can have a strong effect on innovation, even if is not directly targeted to limit it, argues Paraskevopoulou (2012). According to her, regulations can have an impact on both the management of innovations and on the structures on which the company has been built. This is why even if the disruptive technology itself is in the frames that the law provides, the company might need to overcome other legislative problems in terms of business model innovation and utilizing most out of the new technology. Again, this resonates with the dilemma brought up by Herzlinger (2006): if a company is doing well, and has a good

market position, why to risk the current profits, spend on new innovations, risk confrontation with regulations and from the personal perspective of a corporate decision maker: why to risk one's own status and position in a successful company by shaking and stirring the current beneficial state of things? Paraskevopoulou (2012) does state however, that a company should partake in political decision making, because sometimes the regulations are not meant to be restricting towards innovation but because of managerial and structural implications they happen to still do this in the end. If the company can get its voice heard, maybe the legislation will be more lenient towards innovation as well. However, as we discussed earlier, this can work the other way around too: a company enjoying the current status quo, can try to use its influence to make the laws stricter and so deliberately make it more difficult for disruptive technologies to "change the rules of the game" so to speak.

Relying too much on the old profitable business model can prove to be a disastrous strategy, when a new disruptive technology enters the market, making the old business model obsolete. Kodak for example had invested in digital photography before the technology became widespread, but the company failed to capitalize on it, because they instead relied on their old business model (Lucas & Goh, 2009). Largely this was because of the company's inability to understand customer value, undermining the customer will to transfer to digital cameras, but also because of the trouble of organizational changes caused by the new business model and most importantly, the fear that they would cannibalize their current profitable business model (Lucas & Goh, 2009). It is important to note from this case, that Kodak did not have a similar "regulatory protection" against disruptive innovations as the health industry (or insurance industry as we will later discuss), but still they were very protectionist towards their old business model and the profits it created. It is therefore easy to assume, that if a company not only has a profitable large business but also a feeling of "protection by regulation", they could end up to making a similar decision as Kodak. The authors end their research by saying, that if a company wants to be prepared for the change brought by disruptive technology, it needs to be prepared to "attack the culture of the organization" (Lucas & Goh, 2009, p. 55). Although it is easy to have hindsight about the Kodak-case, no company operating in today's era of digitalization should think that a similar fate could not happen to them.

5. COMPETITION DYNAMICS: INNOVATION VS IMITATION

One of the strongest or perhaps even the strongest force for any business is competition: the competitors and the competition are the strongest force which keeps the company innovating and finding new solutions too win over customers. One of the most famous economists of 20th century, Joseph Schumpeter, introduced the idea of creative destruction in his book capitalism, socialism and democracy (1950). He noted, that the "mutation" of industries "revolutionizes the economic structures…incessantly destroying the old one, incessantly creating a new one" (Schumpeter, 1950 p. 83.). According to Schumpeter economic growth is not about gradual and peaceful growth but about creative destruction, where economic disruption is brought by old or new businesses.

What can be derived from Schumpeter's (1950) ideas, is that the more there is product market competition, the less there should be incentives for innovation (Aghion & Howitt, 1992). That is, because of creative destruction, investing heavily on future research, the company might risk the current rents it gets from product market competition (Aghion & Howitt, 1992). In other words: why use money on something which will not increase but possibly decrease your profits? Nevertheless, Aghion et al. (2001) have later clarified this theory: they note, that the issue in innovating is not really about the individual rents of the original innovator, but about the "incremental rates" or the difference in rent between the one that innovates and those who do not. If it is difficult for a company to catch up the difference in R&D, the incentive for innovation is larger, than if the difference is caught up more easily. A company of the industry might try to "escape" from the competition as Aghion et al. (2001) put it. When considering the obstacles that laws, patents and R&D costs put to innovating, it might not necessarily be the best strategy to innovate "too eagerly" in a market, where imitation is easy.

So what aspects affect imitation then? Lieberman & Asaba (2006) see two distinct versions of it. Firstly, there is information-based imitation. In this type of imitation, the companies act in an uncertain environment and so the managers act on the information they get from their competition. The companies following this, might be fast to act and can rush to imitate in order to gain maximum benefits of first-mover advantage. For this reason this type of imitation also holds the greatest risks: bubbles can be created, when companies are

not clear on all the ambiguities related to the decisions. The authors mention the .com-bubble of the 1990's as an example.

Second type of imitation according to Lieberman & Asaba (2006) is rivalry-based imitation. In this type, the imitating companies do not do the imitation because of information but because of economic or strategic reasons. This type of imitation happens, when companies have similar resources and market positions with intense (price) competition. Differentiation could prove to be successful and lead the company away from the tough competition leading to higher profits, but it is also a risky choice. There is no proof, that the new niche or market they strive to proves to be profitable. Therefore it is the most risk-free choice to strive for homogenous offerings throughout the competition. (Lieberman & Asaba, 2006) Although the rivalry-based competition is in general less risky than information-based this does not mean it would be without risk. The companies in the market might all get stronger if the path they have chosen is productive, but it can also foster overall collusion in the competition. (Liebermann & Asaba, 2006) Supposedly one can say, that the expected rate of return for information based imitation is higher than with rivalry based, but so is then the risk. Sometimes following the "safe" path might however prove not to be that safe after all if the company by doing so misses a shot for taking advantage of new revolutionizing technology.

Even if the company does innovate successfully, it might necessarily not enjoy a first-mover advantage for long. Pepall (1997) found in his study of a duopolistic market that even when a company innovates successfully, it cannot hold on for a monopolistic position for long, since its competitor will soon imitate. This is according to Pepall (1997) especially true, when the products of the innovator and the imitator are close to each other. The author also found out in his study, that the imitator is more eager to imitate, when the market is wealthy and the distribution of income between the competitors homogenous. Indeed, Pepall (1997) notes, that unless the innovator is guaranteed a protection for its new product through patents or cooperative alliance with the later entry rival, it might be deterred from innovation all together. These findings resonate with what Liebermann & Asaba (2006) wrote about rivalry-based competition: when competition is intense and imitation is easy, "staying put" and not innovating might prove to be the most risk-free solution.

How much to invest in research and development and to decide whether or not to pursue to innovate are difficult questions, but so is the question on whether to imitate or not as well. If a follower decides to imitate, there is a risk that they do the same mistakes as the first mover, which they would have avoided by not imitating. Also, by imitating the follower might just intensify the price competition, lowering profits for everyone in the field. However, there is a chance that the first-mover did find a "gold-mine" so to speak and by not imitating, the follower misses the market opportunity (and might be left behind the way Aghion et al. (2001) noted). In addition the company might give a "staid" image of itself, and that it is not up to the recent market trends (which surely is noted by the investors). Semadeni & Anderson (2010) call this "the follower's dilemma". Both imitating and not imitating can have deep consequences for the company. What Semadeni & Anderson (2010) found out in their study about professional service industry, was that companies need to balance between rationality, meaning that a company should not jump in to anything too hastily, and progressiveness meaning a company should try to keep up with the development of the business environment. The lower the level of the innovation however, the stronger are the chances that the follower will imitate. This is, because the companies want to keep up with the incremental progress made by the competition but avoid "extreme" innovations. (Semadeni & Anderson, 2010) Innovating radically can therefore be the best way to differentiate according to the authors, since then the competition is also least likely to follow (Semadeni & Anderson, 2010). Their findings resonate with those of Lieberman & Asaba (2006) (rivalry-based competition) and with those of Aghion et al. (2001) about incremental innovation. In a competition with rivalry-based innovation, differentiation will not happen with small incremental innovations, since those can be easily caught up. The best chance for differentiation is to make radical innovations, but those are then the most risky and uncertain investments as well.

So which one should a company favor? Imitation or innovation? According to Jenkins (2014) companies performing poorly should critically evaluate both options. What literature many times suggests according to Jenkins (2014), is that imitation is usually the easier of the two choices. However, according to him, the reality is more complex than that. If the imitating company fails to understand basis of successful imitation, it will waste both "time and "performance opportunities through suboptimal strategies" (Jenkins, 2014, p. 180.). To maximize the benefits of either one, innovation or imitation, the companies should understand the benefits of intertwined innovation and imitation. An innovation

should be designed so that it can be modified for "competitive responses" and imitations should also include new performance features. (Jenkins, 2014) To only focus on innovation or to only focus on imitation is probably not a good strategy, especially in a highly competitive field. One of the most important findings of Jenkins (2014) was, that the managers have a very strong role in whether or not innovation or imitation is emphasized: managerial distrust on company competence with the current product leads to emphasis on innovation (to tackle competitions competitive advantage), and managerial distrust on company innovatory capabilities will lead the company towards imitation. This view challenges the resource-based view, that some companies might not be imitable because of their privileged resources. Instead it emphasizes the importance of managerial decision making. Another important aspect which can be derived from the findings of Jenkins (2014) is, that from a game-theory aspect imitation will ultimately lead to greater innovation as well. That is, because imitation will probably be more successful with some innovative features as discussed, but also because if the imitation fails some new innovation is probably required.

Despite Jenkins (2014) underlining his theory's difference to resource-based view of imitation, there might still be similarities between these approaches. For example, Markides and Williamson (1996, p. 367), note that differentiation will only be beneficial if the differentiating (innovating) company gets a hold on strategic assets, which are hard to obtain and "costly to imitate". However, Markides and Williamson (1996) admit too, that no matter how rare the assets, the benefit will eventually suffer from erosion and imitation. Therefore, although the success of the differentiation is dependent of the resources of the company, the original decision to differentiate or the follower's decisions to imitate or not are all managerial decisions in the end. It cannot be absolutely clear from the beginning which resources are not imitable and therefore, although the end-result can be judged from a resource-based view, the original decision was a managerial one.

In his classical article about profiting from innovation, Teece (1986) noted, that despite innovation can be a major source of benefit for a company, many times it might be others then the original innovator company who get the largest benefit. He sees it as an illusion, that innovating and investing into new technology would give an automatic first-mover advantage to the innovating company, and instead notes, that very well the one who benefits the most might not be the fastest mover with the innovation, but instead the second fastest or even a "slow third" (arguing for imitation). In his article Teece (1986) creates a

managerial framework in which he argues, that the importance of complementary assets around the innovation is what determines who will be the eventual winner in the innovation. These complementary services can be for example manufacturing, service, distribution or complementary services. Basically any asset that will have impact on the commercialization and/or utilization of the new innovation. (Teece, 1986)

Besides complementary services, Teece (1986) mentions trade barriers and regional differences as aspects which can affect who will benefit from innovation. Naturally, if a company creates a new innovation in country A, because of tariffs, taxes or laws, it might be more difficult for it to succeed in country B then another company that originates from country B. Also, the competitive situation might be very different in country B then country A, which would again give an advantage for a B-country company in country B compared to an A-country company. If the overall market in country B is bigger than in country A, then the company from B will get a greater overall benefit from the innovation that country-A company created, as it has a greater potential for revenue. What should be understood from Teece's (1986) article is that even more important than the original innovation are the complementary assets and issues revolving around it. Monetizing an innovation does not mean that one needs to participate in technological innovation. Although his original article is from 1986, in his later article from 2006, he argues, that the framework presented in his earlier article is still valid after two decades. (Teece, 2006)

Teece (1986: 2006) is not alone with his claim, that innovation (even spot-on one) does not mean instant success. The six step-process of Binham and Rattfield (Kalafatis et al, 2000) mentions price, product quality, distribution, image, service and technology as possible positioning strategies. What Padgett and Mulvey (2007) note, is that not only is technology something that can be used as a positioning strategy, but in fact disruptive technology forces changes to the market structure, which then forces the company to change its positioning. This is very similar to what we discussed about Schumpeter's theories on creative destruction (1950).

Porter (1985) who in his article focuses on how to use technology as a competitive advantage, mentions that "technology affects competitive advantage if it has a significant role in determining relative cost, position or differentiation" (Porter, 1985, p. 63). What can be taken from all of these authors, is that the main purpose of innovating new technology is not to generate a new product or service. To receive full advantage of the

new technology, changes to the positioning need to be made. Christensen (2013) noted too, that some firms were at one point able to create new innovative technology and capitalize on it, but then later somehow lost their innovativeness, aggressiveness and customer sensitiveness. This notion too, supports the fact that creating an innovation or being the first to use an innovation (as Teece, 1986, presented as an alternative to innovate self) is only secondary to controlling all the other issues revolving around the monetization of the new innovation. Similarly, this resonates with what Aghion et al (2001) and Lieberman & Asaba (2006) wrote about incremental innovation and the factors affecting imitation. If a company fails to make innovation which is difficult to imitate, the followers will soon catch up, and even if they do innovate in a way which is hard to imitate, erosion will eventually effect the new product/service and the competitors will catch up.

Padgett and Mulvey (2007, p. 376) write that "new technology has the potential to fundamentally change a service market". They also identify three different ways how new disruptive technology can have an impact on the existing market: 1) general impact on market space 2) impact on customer values and 3) impact on firm performance. Let's take a look on each of these separately. Firstly, the authors found out, that companies can and do position and differentiate themselves with the help of the new technology (Padgett and Mulvey, 2007). Secondly, they noticed three different ways how the technology could affect the customers: level of service integration, service interface and interaction. However, they also noted that companies could position themselves wider from each other but still choose to stay in clusters. Finally, they fail to conduct whether or not new technology offers affect firm performance (in terms of ROIC, meaning return on invested capital). They do note, however, that since the impact on customer value is clear, firms might have different goals to use new technology on positioning than instant effect on firm performance. (Padgett and Mulvey, 2007) What we can derive from their findings is that new technology does affect the market as a whole in terms of changes in competition, and it affects the customer value but that it does not necessarily affect firm performance at least right away. However, what we can also imply from this is that firms might have other strategies then short term growth on ROIC when investing to disruptive technology. One could also argue based on these findings that a company striving for more stable short-term ROIC might be skeptical on radical innovations.

This resonates with Porter (1985) who gives recommendations on how a company should formulate its technological strategy in order to make the technology a competitive

advantage. According to him, technology should provide change, and to do that it should "lower cost or raise differentiation directly", "shift cost or uniqueness factors", "lead to first-mover advantage" and "improve overall industry structure" (Porter, 1985, p. 64) . When looking at these we can notice, that all of these factors, and especially the improvement of overall industry factor, can be changes that can fundamentally affect a market, as suggested by Padgett and Mulvey (2007). For example: it is easy to assume that if a large player in a certain market is able to cut its costs, raise differentiation, shift uniqueness factors or improve the overall industry factors, the market could change radically.

From the authors of this chapter, three possible choices are given for companies. They can either innovate, imitate or do nothing as others innovate. All of the choices carry possible benefits or problems for the company, but the main question remains in the incremental level of the innovations: is the incremental level of an innovation high enough to stop imitation and to give a fist-mover advantage, or is it too high making the risks unbearable for the innovator? The possible benefits and problems of these choices are illustrated in the Figure 1 below.

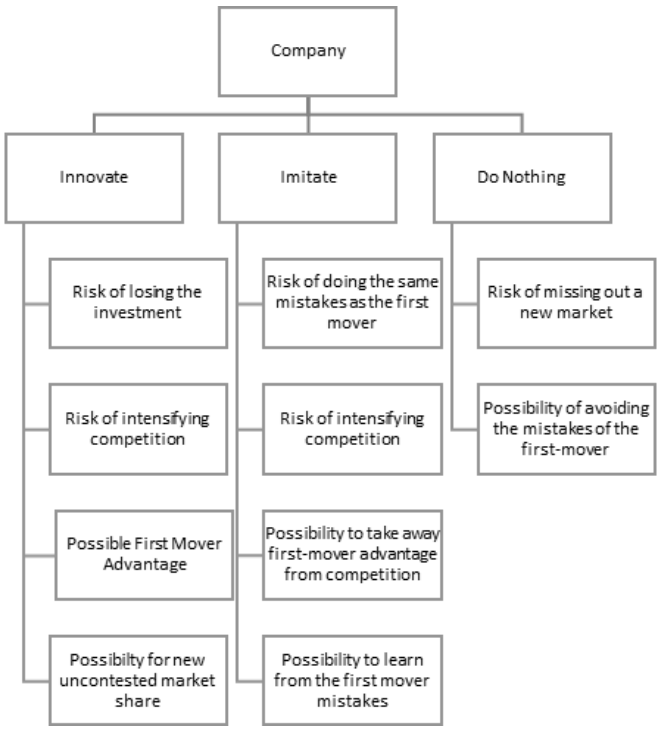

Figure 1: To innovate, to imitate or to do nothing? (Teece, 1986. Liebermann & Asaba, 2006. Jenkins, 2014)

6. LITERATURE SYNTHESIS & THEORETICAL FRAMEWORK

The first topic which literature we discussed about, was using new technology as a competitive advantage. The importance of new technologies was brought up by Miles (1989), who stated that technological change is inevitable. We then looked to a more specific and modern topic of big data, which is also highly linked to this study as telematics based insurances are about big data. The main finding here, was that according to the authors whose literature was discussed (McAfee, 2012: Davenport, 2014: Constantinou & Kalinikosis, 2015) using new technology successfully as a competitive advantage means large changes in the organization and large changes in the strategy of the company. Porter too (1985) noted that new information technology affects all of the "porter's five forces" implying that new technologies can change the whole strategy of the company. Alnori and Bhimaan (2015) and Davenport (2014) all pointed out the main idea of this part of the literature: business and managerial actions are more important than the product development actions to fully monetize new technologies.

As we could conclude, based on the literature, that the main questions in monetizing disruptive technologies is not really about the products themselves, but about other, business model related issues, we then moved on to study business model innovation. What was discovered of that subject was that business models, and the success of them in comparison to others, is about uniqueness (Teece, 2010). It should be hard for the competitors to copy it, because of patent protection or alliances for example. Kim and Mauborgne (1999) noted that companies tend to match their strategies, which is exactly why some companies embrace business model innovation. They try to look their business models from completely new angles, by still maximizing the customer value. The authors then give several proposals on how to do business model innovation. Mostly this advice is about customer value again. Amir and Zott (2012) see that the most important part of business model innovation is in novelty factor and trying to find it. Sarasvathy and Dew (2005) and O'Connor & Rice (2012) see business model innovation more in the way of creating new value for customers than actually finding it Chesborough (2010) supported this, and noted that it is impossible through pre-made analysis to find customer value when the company can in fact create it through business model innovation. Chesborough and Rosenbloom (2002) noted too, that the larger companies can test out different business

models in different divisions and see which one work. The on-going analysis right after the launch is the most important part of business model innovation nevertheless; the model needs to be flexible in order to meet the customer needs. Whether or not companies mainly create new value or find hidden value through business model innovation, the most important part that should be taken and understood from this section is that through new technologies and business model innovation the companies can harvest customer value that is harder to reach for their competitors. By not embracing business model innovation the companies might be left to harvest the same customer value with their competitors.

So if new technologies are emerging in an ever growing rate, and if the business model innovation needed for it monetization can bring unique customer value inaccessible to all the company's competitors, why would any firm feel reserved about these actions? One reason can be regulation. Hwang & Christensen (2008) brought up the health care industry, where the customers are protected by the state with regulations over new drugs and health care practices. Despite the fact that the regulation is made to protect the customers, it protects the current big players in the market too; their profitable business model is not at risk because of any disruptive technologies. Herzlinger (2006) supported this notion and noted that political risk is a factor here too: the law-makers face a greater political risk in under-, than over-regulating. This leaves the companies with a great incentive to lobby the law-makers to keep the regulation as restrictive as it is, as the lobbying actions have a great probability of succeeding. Despite the very limiting nature of health care industry regulations Hezlinger (2006) still noted, that business model innovation and embracing new technologies is possible in the field, it is just much slower. At this point, we reminded ourselves that Von den Eichen et al (2015) stated that confidence is needed for business model innovation to be successful, as it requires such large changes to the company structure. Surely, if a company were to truly embrace business model innovation in a situation, where the company is very profitable and protected by outside competition, the company would need even more confidence than usually and probably lack the confidence altogether to even consider such a move. Health care industry as an example is very clear as the regulation is so strict. Paraskevopoulou (2012) however, reminds us, that sometimes the law might be unintentionally restrictive. In those cases she advises companies to lobby for the change of the law. Still the same question remains: if the company benefits from the current status quo, why would it lobby to change the laws, even if they were unintentionally restrictive. Finally, we took a look on the case of Kodak as presented by

Lucas and Goh (2009). What was learnt, was that despite Kodak lacking a regulatory protection, it was still very hesitant to change its profitable business model to a new one, which lead to a situation, where it lost its change to a first-mover advantage in a completely new market. What should be taken from this part, is that companies can be very hesitant to engage in business model innovation if they are profiting from the current state of things. This is especially true when there are strong regulations protecting the profitable business model.

Even if the company finally decides, that it should not embrace new technology or business model innovation, it still faces the chance, that its competitor(s) might do that. This led us to study literature on the relationship between innovation and imitation. Competition between businesses has been for a long time partly determined by creative destruction, where new innovations destroy old businesses and favor new ones (Schumpeter, 1950). However, what was the main point of this part of the literature was best described by Aghion et al. (2001). The success of an innovation is not determined by the individual rate of innovation, but by the incremental rate of it. In other words: how progressive is the innovation compared to others. If the incremental rate is high enough the innovating company might "escape" its competition, as the innovation is harder to imitate the higher the incremental rates are. Liebermann and Asaba (2006) founded two types of imitation, the first one being information-based imitation, where the companies are fast to imitate (typical to high-tech businesses). The other was rivalry-based imitation, where the imitator imitates for strategic or economic reasons, and where the companies are fairly close to each other offering homogenous offerings. This type of imitation is closer to the topic of this thesis. Innovation and imitation should still not be seen as two separate issues, but as intertwined subjects, as successful imitation usually requires new innovations too according to Pepall (1997). Jenkins (2014) says this too and adds, that both options should be critically evaluated. Markides and Williamson (1996) note that eventually even the best innovations will suffer from erosion and imitation. Teece (1986) goes as far as saying that many times the second comer or even the slow third might be the biggest benefiter of a technology.

Semadeni & Anderson (2010) introduced the "follower's dilemma" which well describes the problems associated with the incremental rates of innovation from the imitators' perspective: if the imitator chooses not to imitate, it might miss its chance of a new less uncontested market. However, by imitating it risks of doing the same mistakes again, and

intensifying the competition. Although Semadeni & Anderson (2010) do not call it that way, they introduce the "innovator's dilemma" too: the innovator faces a smaller risk of imitation with higher incremental rate of innovation. However, simultaneously it faces a higher risk of failure as well. The three choices and the outcomes of those choices, the companies face in terms of innovation and imitation are illustrated at the end of chapter 5 in Figure 1.

What should be taken from this part of the literature is the importance of the incremental level of innovation and the three choices it leaves for companies. When innovating, companies need to analyze whether or not the incremental level of innovation is high enough to encounter possible imitation. Then again imitation is not necessarily an easy option either, even if the incremental level of innovation is not too high: the company might make the same mistakes as its competitor or unnecessarily intensify the competition. Not to do anything could be a choice of avoiding the mistakes of the competition, but it could also lead to a situation, where the company is out of the game, so to speak.

The theoretical framework of this thesis could be put together as follows. A new technology, which might better address customer value, or create new one, emerges. If a company wants to monetize that technology properly, they need to make big changes to their business model. Business model innovation, then again means large changes to the company structure; all the way from its employees, company culture and processes. If the company benefits from the current state of things it probably is very hesitant to radically alter its current business model, even if the new technology would better address the customer value. This is especially true, when strict regulation protects the profitable current business model from disruptive innovations out- or inside the current competition. Even strict regulations, however, do not prevent innovations from happening, just slow them down. If a regulation protected company decides to innovate nevertheless, it risks the current profitable state of things and it will not get a first-mover advantage from the innovation if the incremental level of innovation is not high enough, in which occasion, its competitors can imitate it, and perhaps even learn from its mistakes, profiting more from the innovation in the end. Then again, even if the company decides not to engage in monetizing the product through business model innovation, its competitor might do this. This is when the company needs to decide whether or not it will imitate or not. Again, the company might learn from the mistakes of its competitors, but it might also just do the same mistakes as its competition. It could also miss the opportunity of the new technology

by not innovating or not imitating. This framework, and the questions it raises for a company management has been depicted in Figure 2 below. This framework as itself already gives an idea on how a company from a traditional industry deals with the issues revolving around new technologies, but it cannot by itself answer the problems faced in the insurance market as there are some industry specific questions. We will have a closer look on these issues in the next chapter.

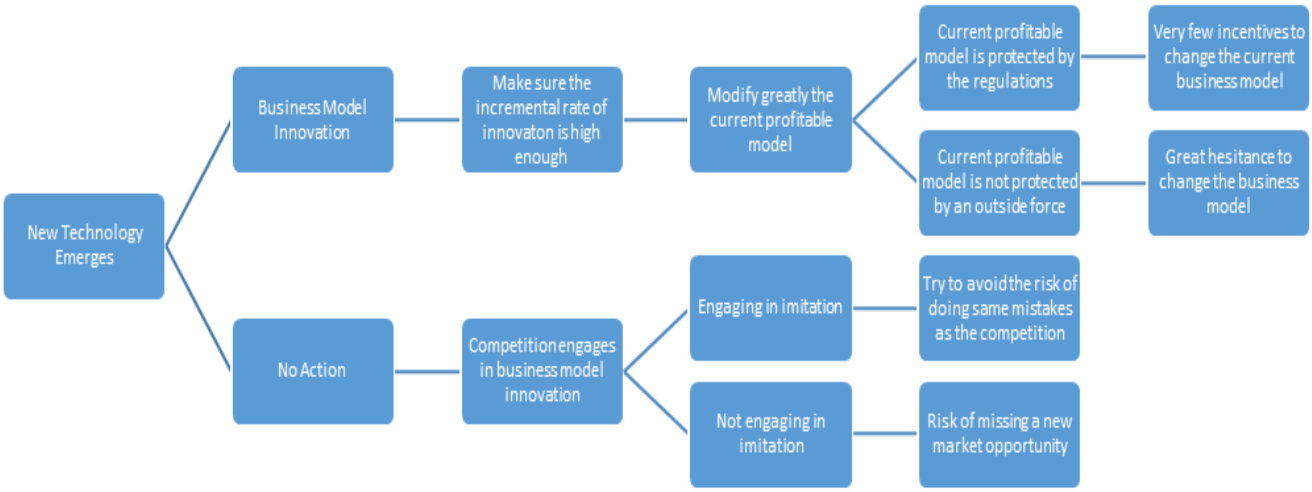

Figure 2: Theoretical framework

7. INSURANCE BUSINESS IN LITERATURE AND PRIVATE STUDIES

Insurances are a very old business, and risk management has been a key component of this business as long as it has existed. In his article “an overview of insurance market” in 1967 John S. Bickley describes how the growing competition has put pressures on premiums. Some of Bickleys (1967) arguments or positions seem not valid today, for example he sees “little likelihood” that computers would bring any cost savings to insurance companies. What is interesting to see however, is what has stayed the same: what are the underlying truths of insurance business which prevail, despite the technological changes?

Bickley (1967) says that "price wars are destructive" and in his text emphasizes the meaning of sales and cost reduction in overcoming that risk. For risk adjustment for cars, he notes that changes usually come in late. This was probably because at the time of writing his book they did not have the technology to go through the data in real time, and therefore the calculation of the risks was a) slower and b) more imprecise. However, what we can learn from Bickley and the fundamentals of the 1960's, insurance business is that risk is and has always been the driving force in the insurance business. However, what is different today is that insurance companies have new technology that has the potential to revolutionize the whole business. Whereas in the 1960's the insurance companies could use only some aspects to count the price of the car insurance and the pricing according to risk was "inadequate" (Bickley, 1967), today the insurance companies can use dozens of different aspects to rate their drivers and risk calculation is a vital part of their competition. The products however are still not personalized. Different groups can be risk-categorized fairly accurately but still, an individual might seem to be risk-prone although he or she is not. Most importantly, never before in history have people been able to affect the rates of their insurances by changing their own every day behavior. The emergence of big data technology in the form of telematics has made this possible, but they will also require changes to the current business models of the insurance companies, as we have also discussed.

In their article Ferguson et al. (2003) consider if insurance business is viable in its current form – meaning whether or not the risk levels and pricing bring viable profits to the companies. What they argue in their article, is that many times consumers see economically viable insurance premiums as too high, leading to a situation, where the government pressures the insurance companies to lower their premiums below a point where it would not be economically viable anymore. The authors argue that this leads to a situation, where the insurance companies must concentrate more on an excessive risk assessment, possibly leaving the customers without an insurance altogether if the estimated risk exceeds a reasonable amount. What Ferguson et al. (2003) see, is that if all the parties (insurance companies and the customers) act for their own self-interest, it might drive those parties away from reaching a situation where all benefit. The authors see the system itself a problem: when unable to price their insurances viably, insurance companies turn to risk-classification, which according to the authors is unfair to some groups. Classification based on income-levels, neighborhoods or credit history might discriminate against some

groups more than others. Although Ferguson et al.'s (2003) study is strongly biased to the US and strongly emphasizes the political factor, which differs much country by country, their article explains well how the insurance companies generally operate. It would be impossible to charge fixed prices from everyone, because then the customers would deem the prices too high, which would then either lead to a situation where the government would intervene (as Ferguson et al. 2003 suggest) or to a situation, where the competition uses risk classifications to price their products, in which case the fixed priced insurances would only be affordable to those who belong to the higher risk groups in which case again – selling the insurances would not be viable. Since consumers will always be heterogeneous when it comes to risk, grouping people into different risk groups, no matter how small, will always lead to "mismatched" groups to some extent.

Desyllas and Sako (2013) have studied how the US insurance company Progressive has used business model innovation with the adaptation of Pay-As-You-Drive insurance (PAYD-insurance), a form of telematics-based car insurance. The authors point out, that what characterizes the US insurance market is fierce price competition and "shift to more efficient insurer". This basically means effective risk categorization: the better the customer segmentation (poor versus careful drivers) the better the profit margin/combined ratio since less damages need to be paid. According to Desyllas and Sako (2013) although there are several categories, that the insurance companies can use to classify their customers (such as age, living place, car brand etc.) they are still imperfect and therefore profits vary overtime. This could indicate that although the insurance business has developed a long way from the world that Bickley (1967) described, some of the basic problems still remain. Although we have better computers (more data with higher speed), and therefore more information to use, a better generalization is still a generalization.

One important aspect in insurance competition which the authors mention is financial income. For example out of Progressives 9% operating margin 5/9, consisted of profit from the insurances (insurance premiums vs. claims and underwriting expenses) and 4/9 consisted of financial income (invested capital) (Desyllas & Sako, 2013). The insurance companies can (and do) significantly increase their income by investing the money they have in their use at a given moment. However, this strategy is "heavily dependent on stock market cycles". What supports this claim, is the combined ratio of Progressive (ratio of claims and expense cost to income). If the combined ratio figure is below 100 it means that the company is profitable. In 2003 Progressive's ratio was 87.3, which was well below the

average of the industry (94.6) (Desyllas & Sako, 2013). However, right after the financial crisis and the adaptation of PAYD, the combined ratio of Progressive was much higher at 94.6, but nevertheless still lower than the industry average (wiki-invest, 2016). To overcome or reduce this dependency on the overall condition of the stock market is a strong competitive advantage to an insurance company.

Desyllas and Sako (2013) note several differences on the new PAYD-based business model compared to a conventional insurance company business model. Firstly, they argue that the customer value proposition will alter significantly with the new technology. Whereas with traditional models, the customers only get the underwriting cover and "mental safety" that someone will financially cover them in a case of accident. With the PAYD-insurances they get "empowered", in the sense that they can themselves affect how much they pay. Also, with the additional offerings such as roadside assistance and emergency button, they get to drive even safer than before and feel safer than ever before.

The second difference is market segmenting. Whereas previously people have been segmented into groups, now Progressive can identify and charge the drivers according their individual characteristics (Desyllas & Sako 2013). This means, that whereas previously drivers were affected solely by their neighborhood, age, credit rating etc. now customers can affect their prices by their own behavior. They mention some of the groups that are most probable to benefit from the new offering of the company, such as lower-income customers, young customers and those with a bad credit rating. Also they point out, that with the additional offerings the company can generate a new segment of those people who are attracted by the additional offerings that can be attached to the PAYD-system. (Desyllas & Sako, 2013)

Third difference is the change to the value chain of the company. Whereas previously information from customers has been collected at the time of creating a new insurance or later through surveys, with the new technology it is possible to collect information about their (driving) behavior all the time, and there is much more of it available. Also, the managing of the PAYD-insurances is done online, and the people who are willing to try it are more internet- and tech-savvy then insurance holders in general, which means savings to the company, since that means less work for brokers. (Desyllas & Sako, 2013)

Fourthly, the value network of the company got some additions. Previously the most important stakeholders were suppliers, brokers, customers and the state. Now there are

new stakeholders in the network, most notably telematics providers and telecommunication operators. (Desyllas & Sako, 2013) As we discussed earlier the relation to some (or possibly all) stakeholders will change with the new stakeholders entering the network (for example telematics providers). This might provide some challenges for the company.

The fifth difference according to the authors (Desyllas & Sako, 2013) was about the profit formula of the company. Previously the revenue of the company was made from premiums of the insurances that were counted with the proxy factors (age living place credit rating etc.) Now that the premiums are counted according to individual driving behavior, there should be less customers who are imperfectly charged; for example customers who are young but still drive safely and not very much. Also the costs will be affected: underwriting and paying claims on accidents will remain as big cost factors, but now that customers will change their driving behavior in order to reduce payments this should lead to overall less accidents and therefore less costs related to them. The authors do note, however, that selecting good drivers might not lead to "better" premiums at first, but it does still have an effect on renewal rates and accessing new market segments nevertheless. (Desyllas & Sako, 2013). What the new profit formula means, is that there will be smaller premiums, but they will be more "long-term" and "more safe" since the customers are more likely to renew their insurances with the new customers and less likely to drive an accident because of their new, safer driving behavior. So in other words: PAYD-system will help the insurance company to get more sustainable revenue and to reduce its costs.

Finally, the whole competitive strategy of the company changes. Whereas, with a conventional insurance company business model, the company tries to take advantage of economies of scale by acquiring as many customers as possible, with the PAYD-insurance the company is more concerned in rewarding the "good customers", and this way gaining customers from conventional insurances, gaining new market segments and making savings on underwriting and accident losses. (Desyllas & Sako, 2013) Supposedly one could argue from this, is that conventional insurance strategy is like producing one-size fits all clothes; they fit all, but some better than others (and some perhaps not at all). PAYD-insurances then again are, at their best, tailored to the needs of each individual personally. The differences between the old and the new business model are depicted below in Table 3.

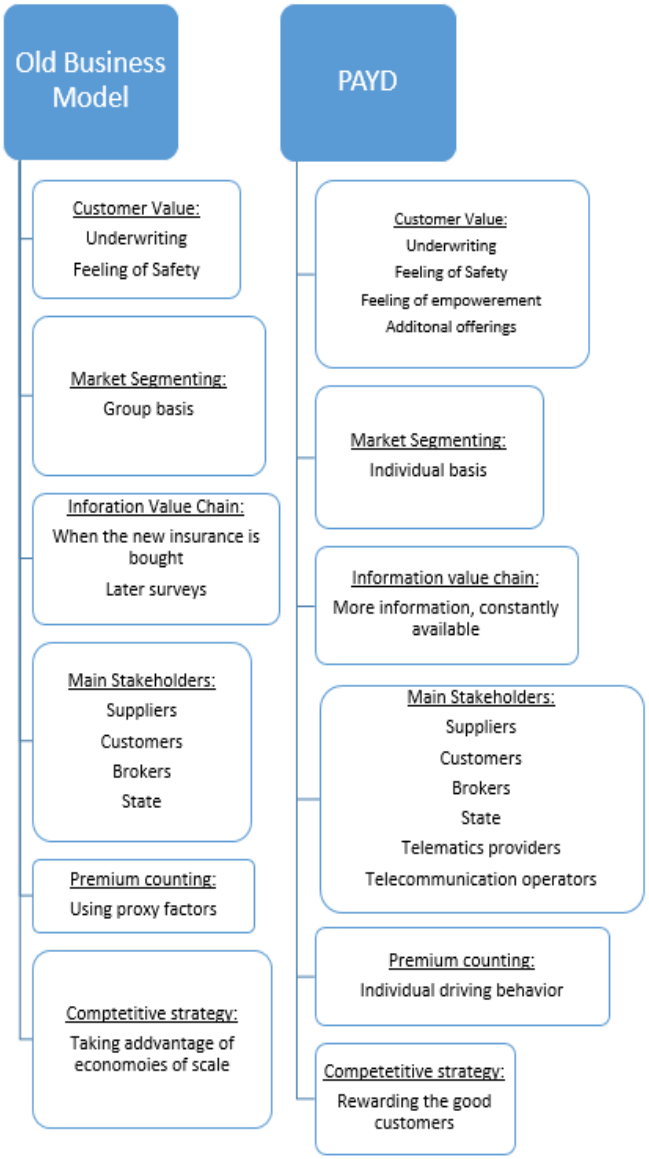

Table 3: Business model changes for Progressive (Desyllas & Sako, 2013)

Desyllas and Sako (2013) note that Progressive has been able to generate the new business model alongside the old one. This seems similar to what we discussed earlier about the findings of Cherborough (2010) about creating new business models alongside old one. It would be impossible to assume that one can know how the consumers will react to the product before it has been launched so the best idea is to let the new business model develop over time. In the case of Progressive for example the managers first thought that the new business model would contradict with the business model of the conventional insurances, but in fact found that they could keep it up alongside the old business model as they actually support each other instead of damaging. (Desyllas & Sako, 2013)

Despite being the first to offer a PAYD-product in the US and being very protective towards it intellectual property, competition followed Progressive shortly after the introduction of its PAYD-product. Progressive nevertheless gained a first-mover advantage, but there are some issues the authors note that will affect the competition in the field: firstly, the technology has matured and its cost have dropped. As telematics technology becomes a standard for many car models companies like Progressive lose their competitive advantage making PAYD-insurances more accessible to larger number of people and it is probably easier for other companies to join the race too, since they do not have to invest as money to the technology development as progressive did. (Desyllas & Sako, 2013)

Second change that is causing problems to the larger insurance providers such as Progressive, is that there has been constant growth in the telematics service providers. Like the cost drops in the technology itself, this change makes it easier to enter the PAYD-insurance field even without big initial investments that Progressive did. (Desyllas & Sako, 2013)

Finally, the authors highlight the growing public concerns on privacy. The trend in social media and with other similar service is, that people are reluctant to give away their personal privacy. (Desyllas & Sako, 2013) The authors do not mention it, but this fact does raise up the question of information ownership too. Perhaps if customers are too reluctant to give way their information to insurance companies they might be more willing to do that if their information would be stored by the insurance company but owned by themselves. This could then again be negative development for the insurance companies, since it would make changing insurance companies easier for the customers (the customer could give his/her information to another insurance company) which would minimize the advantages they get from increased customer contract renewal through the PAYD-product.

What Desyllas and Sako (2013) found out in their research is that designing and implementing a new business model is not enough by itself, but the firm should also capture the value that the new business model brings with it. This resonates with the claims of Porter (1985), McAfee et al. (2012), Chesborough (2009) and others, in the sense that new business models cannot be studied and perfectly implemented, but in fact they are formed through time and experimentation. One aspect, that Desyllas and Sako (2013) emphasize are the intellectual property rights, which they see as very important factors

when creating a new business model based on PAYD-systems, and also brought up by Teece (2006) as possibly one of the crucial factors when creating a new business model for innovations. However, Desyllas and Sako (2013) validate this point from Progressive's perspective and how Progressive could have benefitted more from their new business model. However, Progressive was not a pioneer just in terms of business model innovation, but from technological perspective too. Still, although Progressive was fairly effective in protecting its intellectual property rights, it did not take long for competitors to show up as the authors point, reminding us of the dilemma between innovation and imitation.

Whereas Desyllas and Sako (2013) focused on an individual insurance company, Karapipers et al. (2015) focus on the whole field of telematics-insurances in the United States. They too see, that PAYD-insurances benefit the customers not only in price reduction but improved safety and claims experience. (Karapiperis et al 2015). As Desyllas and Sako (2013), Karapiperis et al. (2015) note that privacy is one of the core problems in PAYD-insurances for the customers and therefore for the providers as well. Karapiperis et al (2015), see that because of PAYD-insurances and other telematics insurances the whole insurance industry is moving towards becoming "a big data industry". They see that the reduction of cost in telematics technology has led to this situation.

Desyllas and Sako (2013) focused in their study to Progressive which uses a method where the customers get discount to their current insurance payments if they drive less riskily. Another method mentioned by Karapiperis et al. (2015) is the one used by Allstate: that is, that the drivers will not receive any discounts but in fact they might lose insurance savings if they drive more riskily. State Farm is mentioned as a company that has more additional services included in their telematics offerings. This is a strategy recommended by Desyllas and Sako (2013) too.

Karapiperis et. al (2015) describe the auto-insurance market in a way that correlates with the claims of Ferguson et al. (2003) and the viability of the insurance market in general. In the last ten years before the writing of the article by Karapiperis et al. (2015) the total premiums for the auto insurance industry in the United States has grown less than the inflation at the same time, and so they argue, that even those companies with more growth have succeeded in that by capturing market share from other companies, making "attraction, retention and accurate rating" more important goals than ever for insurance companies. (Karapiperis et al. 2015)

Progressive, which was the example by Desyllas and Sako (2013) is still mentioned as the market leader of auto insurances by Karapiperis et al. (2015). Perhaps even more without criticism, Karapiperis et al. (2015) see that Progressive has benefitted from its first mover advantage, since they were able to create new market space and gain customer loyalty by being first. The authors see, that latecomers of the user based insurance market may face serious disadvantages, since customer retention is proven to be cheaper then customer acquisition, so if some of the customers of the latecomers have been lured away with telematics-based insurances, it might prove difficult to get them back.

Consumers too, seem to accept the product, and according to the authors, a study by Deloitte stated, that most of the car insurance policy holders would be ready to try a telematics based insurance. (Karapiperis et al. 2015) The customer value stems not only from the reduced price but from the add-on services. For insurers add-on services are of course a great possibility to generate extra revenue streams, to differentiate themselves and also to improve customer retention. The authors also mention gamification as a possibility for future customer value: in this scenario a customer could "play" against his friends in order to drive less or be more eco-friendly. (Karapiperis et al. 2015)

Karapiperis et al. (2015) see tremendous possibilities for the industry to be revolutionized by the new technology. They note that according to some studies, insurers could offer 80% discounts on insurances and still be profitable. This could revolutionize the industry and change the pre-telematics era insurance competition rules portrayed by Ferguson et al (2003) and Bickley (1967). Karapiperis et al. (2015) remind too, that the change could happen fairly quickly, since as we have discussed, the first-mover advantage can be very beneficial, and seen from the other side, and latecomers can suffer significantly. Another aspect that harms the latecomers of telematics insurance technology, is that it is easier to do customer selection for those companies that are early adopters of the technology. Those customers who are more risk-prone by choice, or know that they are more risk-prone will probably join a UBI (usage based insurance)-service. However, if (or when) the technology is more common, it is possible for the company to raise the prices for those customers who refuse to join the program. Those customers will then find cheaper prices at a latecomer company, which does not offer a UBI-service. The less risk-prone customers of the latecomer company, however, will join the UBI-company and so the latecomer is left with more risk-prone customers then the other UBI-offering companies. Naturally, some customers facing the possibility of reduced premiums will alter their driving behavior

making the previously risk-prone customers less risk-prone. This is obviously one of the most beneficial aspects of telematics insurances to insurance companies.

Karapiperis et al (2015) see the lack of transparency as a major problem in how the UBI-products have been brought to the market in the US. This is a very important point for two reasons. Firstly, as we mentioned customers can change the way how they drive and thus become less risk-prone meaning less accidents and less costs for the insurance company. However, they are only able to change their behavior if they know how they are measured. According to Karapiperis et al. (2015) customers won't change their driving behavior as much if they do not know all the factors that have an impact to the price. Secondly, privacy protection is one of the main concerns with the technology (as noted by Desyllas and Sako, 2013 too), but it probably won't convince the customers that the information collected of them would be treated with caution, if they do not even know what information is being collected. (Karapiperis et al. 2015) No doubt transparent measurements would also lower the barrier of entry for new UBI customers.

Although both Karapiperis et. al and Desyllas and Sako (2015, 2013) saw privacy as one of the main concerns for the customers Dericx et al. (2015) found in their research that since the UBI-offering companies also offer price reductions, the customers won't feel too negatively about their personal information (they value the price reduction more than the loss of privacy). However, Dericx et al (2015) point out as well, that the customers do feel very negatively towards giving away their information to third-parties, which is something that companies striving to create good UBI-offers ought to avoid. This conclusion is supported by Kehr et al. (2015), who found out in their research that consumers are not really too concerned over their privacy, when they are offered a product which gives them financially positive benefits given by a "reliable institution" such as an insurance company. However, they did find out as well, that the results varied based on the pre-assessed attitudes towards the product (Kehr et al. 2015) This could mean, that a segment of the customers (though possibly not a large one) is more "privacy-aware" then others, and has a more negative view on products that could endanger his/her privacy.

Not just researchers, but companies too are naturally interested in analyzing and researching issues related to telematics insurances. Willis Towers & Watson studied the consumer perspective where there is a wide interest towards usage-based insurances. According to a study made by Willis Towers & Watson (2014), which had over 7500

respondents from the US and six European countries, 90% of the respondents were ready to try a UBI-based insurance if there was no risk of their premium rising. This resonates with the findings about first-mover advantage and what Desyllas and Sako (2013) found out about Progressive insurance strategy, meaning that being fast and acquiring as many customers as possible from the beginning could seem like a good strategy. Most of the survey-participants were willing to change their driving-habits and willing to pay for additional services (Willis Towers Watson, 2014). Ptolemus consulting group (2013) confirm in their research, that the market in the US seems to be ready for the new products: they note, that Progressive as first-mover in the field has successfully educated the customers about the new technology. According to them the recession forces the consumers to find new ways to save money (like UBI-insurances) and finally they see that there is an "initial rush" now that the product is fairly new.

Another consulting company PWC (2016) has in their study found out, that most of the insurance CEO's they interviewed felt that improved data analytics and telematics technology are "likely to change the industry" over the next five years. However, most of them feel threatened by the new technology as well, since they do not know how the customer needs will change because of the technology. Over regulation is mostly seen as the biggest obstacle to growth (PWC, 2016). Karapiperis et al. (2015) mentioned that in the United States the (state) government many times supports and even subsidizes telematics-based car insurances because of their possible positive impact on the society in general. Still, there might be problems with the technology concerning intellectual property or the ownership of information for example.

Looking at these findings from the perspective of the theoretical framework insurance companies would not seem to have much sense in leaving themselves out of the telematics-based car insurances. Although erosion did hit its new business model, for a while Progressive was able to enjoy a first-mover advantage, from telematics-based car insurances, proving that the incremental rates of innovation were high enough. Then again, as it would seem from the writings of Karapiperis et al. (2015) the latecomers did benefit as well, meaning there is a strong incentive for imitating too. It would seem, that insurance business is not affected by the theoretical framework created in this study; telematics provides a new way to escape the contested marketplace to better offer customer value. However, the articles we have discussed, are mainly from the US. Although the products and the basic-principles behind insurances are similar across the globe, the Finnish

regulatory environment has made the business models of Finnish companies different, leaving them to ponder the question presented in the theoretical framework, despite the fact, that they were not as relevant to the US insurance companies. There is no literature on the forces affecting the Finnish insurance companies, so seven interviews with Finnish insurance managers were conducted to find out what makes the Finnish insurance market different. Before taking a closer look on the results of those interviews we will discuss the methodology of this study and how those interviews were conducted.

8. METHODOLOGY

8.1 The Research Context

The onto-epistemological starting point for this study is objective. It is both assumed that "the social world has existence independently of people and their actions and activities" and to "expect there to be a world that is external and theory-neutral". (Eriksson & Kovalainen, 2008, p. 11-25). In other words; from a philosophical perspective, we do not see the world as something that can be changed just by the actors changing their views or understanding about it, but as something that exists independently of them.

To understand the chosen methodology of this study, one has to first keep in mind its main research question "how slow-moving or traditional industries and companies react on disruptive technological advancements?" and its sub-questions a) How are the business models of regulatory bound companies constructed? b) How does the similarity of business models affect competition? And c) How do slow-moving or traditional companies react to the innovativeness of their competitors? The theoretical framework made to help answer those questions was discussed and created earlier in this study. As we found out, there is much theory available on disruptive technologies, business model innovation, regulations relation to business models and on innovation and imitation. Studying those topics helped us to create context for the research question, and the sub-questions. Still, without conducting our own research, it is impossible to answer the sub-questions or the research

question confidently. This is why we now move on to discuss how the findings of this study were conducted and for what reasons. As the answer to the research question of this study is not possible to be a numerical one, qualitative research over quantitative, and more specifically a grounded theory approach research to be the most suited for this study. We will go more in to detail about these choices in this chapter.

8.2 A grounded theory

To find the answer to the research question of this study we need to use the theoretical framework to create, together with the findings of the study, a new theory which explains this particular study and is also applicable to other similar contexts. To achieve this, grounded theory is needed, since it, as Eriksson and Kovalainen (2008, p. 158) put it "the grounded theory approach is developed for theorizing from the data through and with the help of a highly formalized and descriptive methodology". As they later then continue "…theory development thus takes place in immediate 'contact' with the data: the closeness of the data is ever present in the grounded theory approach." (Eriksson & Kovalainen, 2008, p. 161) To create the explaining theory for this study, the context specific findings are very important. Another approach, less formalized and less in contact with the data would be good for a case study, where the researcher sees, if the theory fits the context or not, however, as we are now searching a new theory to explain the research question, no "stone should be left turn" and to this grounded theory is a well suited approach.

What comes clear from all of this is, that the data-analysis is, where the uniqueness of grounded theory approach is most evident and that the analysis and interplay with it and the data collection is important in grounded theory. As Eriksson and Kovalainen (2008, p 156) put it" …this new theory should consist of a set of plausible relationships proposed among concepts and sets of concepts is the outcome of the method's application. Therefore, it is possible to say that theory is an outcome of empirical analysis." We will discuss the analysis and how it was done in this study more in detail later in this chapter.

Although this study has some similarities to cases-study approach and to cross-case analysis, it is important to understand the difference between the selected grounded theory approach and the former approaches. As Yin puts it: "A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." (Yin, 2013 p.13) In this study however, there is no ready-made clear phenomenon which

could be directly "tried out" in the real life context of this study, but instead there is a larger theoretical context which to some extent is applicable to it but not completely, making grounded theory a better choice.

8.3 The samples

Seven different managers from Finnish insurance companies are interviewed in this thesis. The main reason for the sample size comes from the core principles of grounded theory. According to Glaser and Strauss (1967) a researcher should have as many samples as needed to have enough variety in the answers in order to have all the categories that will come out of the subject and to reach saturation. It should be noted here as well, that maximizing the samples or having as many as possible, can be very few depending of the study. In this case seven was enough to create saturation, and the number of respondents interviewed means, that this study covers basically all of the Finnish car insurance market making its results more valid. Seven is coincidentally also a sample size for qualitative analysis which is approved by several authors discussing qualitative methods (for example Eisenhardt 1989, Farqhuar 2012, Eriksson & Kovalainen 2008).

There were three main criteria for the people to be interviewed: they needed to be familiar with insurance competition dynamics in Finland, they needed to be familiar with the strategy and business model of their own company and finally, they needed to know about the new telematics-based insurances. This criteria emphasizes the respondents' knowledge of strategy over technology. This is so, because the research question of this thesis is about how a company makes strategic decisions over new innovation, not about the particular innovation itself. A person more familiar with the business side than the technological side is better to answer in a way that relates to the topic of this thesis. To make sure, that the respondents met with the criteria an HR manager was first contacted, with whom the topic of this thesis would be discussed and then a conclusion would be made on whom to contact for the actual interview.

8.4 Collection methods

Despite some more precise follow-up questions, the interviews were conducted mostly in a narrative form were the questions were open-ended and the respondents encouraged to tell with their own words how a situation is built or how they feel about an issue. This was

done to find out the true relation of the company and the industry towards the new innovation and the industry in general. Each manager needed, and was given a possibility to freely speak his/her mind over the issues. It needed to be found out if there were issues which would be hard to find out in the questions otherwise; with very strict questions and time limit this would not have been possible. All of the manager interviews were scheduled for an hour and lasted from 50 minutes to few minutes past an hour. All interviews except one were conducted face-to-face. The one that was not face-to-face was conducted via Skype. In one case there were two respondents speaking for one company instead of one interviewee. These two respondents will still be discussed as one person later in this thesis to protect their anonymity and for reasons of clarity.

Both in the managerial interviews and the client interviews Farqhuar's (2012) advice was followed; firstly as an interviewer I tried my best to be discrete and respectful by stating that the interview can be stopped at any time, and reminded them that their anonymity in this research is guaranteed and noted that the interview is recorded, but that the recording is only used for this study. Farqhuar's (2012) other advice is to "use language that is comprehensible and familiar to the informants". In this case however, terminology was used fairly freely; if someone did not know what was meant with a term related to the industry that already tells something about the company and the respondent. Since Farqhuar's (2012, p. 73) one main point is that the researches should "keep scrupulous records of who (including detail of position, how long they have worked for the company and how long they have been in that job), when, where, how long" all of that information was asked before the interview started. Also it was asked how long of an experience the interviewees have from insurance industry and whether they have worked in the same company for the whole time.

The managers were given freedom to tell how they feel about different issues, although there were several individual questions/points an answer was needed to. This is why some of the questions were more open than other. There needed to be open questions in case something important would be missed – letting the interviewees talk freely reduced this risk. However, if the respondents were unable to address an important point that needed to be somehow commented, a more specific follow-up question would then be presented. The interview was categorized into three main topics. Firstly, what determines the Finnish insurance competition and how is the Finnish insurance business environment. Secondly, how should a business model of a Finnish insurance company be built. Thirdly, the

respondents' were asked questions to determine their opinions and judgements on telematics based car insurances, and how they would change both the business models of the companies and the competition in the industry.

After each interview, Farqhuar's (2012) final advice was followed and an "aide-mémoire", constructed, meaning instant analytical notes after and during the interview. The purpose of these notes was to gather possible "highlights" which occurred during or right after the interview and were helpful later determining categories in grounded theory coding.

8.5 Comparative analysis: grounded theory and coding

As there is no ready-made theory which would answer the research question or perfectly match the situation at hand, the results are analyzed and coded consistent with the grounded theory first introduced by Glaser and Strauss (1967). According to them, one can use qualitative data to form a new theory by creating categories out of the evidence and then comparing these to each other. In practice this was done by writing down all the interviews and then coding them with accurate codes, which could then be put into a category, which then ended up as groups in the findings of this study. What is important with grounded theory, is that no theoretical framework nor any hypothesis or presumptions affect the emergence of the categories. The authors ask the researcher "to be theoretically sensitive" (Glaser & Strauss, 1967). The data needs to be what leads the researcher to a certain category and then theory. The coding process itself was done with the help of Atlas.ti program. During coding four different categories and out of these categories one main-category of which the others were reliant on was defined as well.

The analysis of this study already started at the end of the interviews with the "aide-mémoire" written right after the interviews. Like Farqhuar (2012), Eriksson and Kovalainen (2008, p. 127) state too that "(researcher) starts the analysis of empirical data very early on in their research. Even if methods books (this one included) present data collection and data analysis as separate processes, in practice they are seldom so clearly separable from each other." Also in grounded theory, it is important to remember, that the hypothesis only needs to be "suggested not proved", while creating the different categories (Glaser & Strauss, 1967). The aide-memoire and writing down / reading the interviews helped to grasp the emerging hypothesis and then create codes and categories.

Eriksson and Kovalainen (2008) note that grounded theory has been criticized, because it is not widely applicable: to some studies it is not a proper fit, while for some it is. However, for this particular study grounded theory is suitable, because despite the fact that there is a fair amount of literature about issues that revolve around insurance companies and innovating overall, the true nature of the issue had to be solved from the interview results. As Eriksson and Kovalainen (2008, p. 156) state it themselves: "What is specific for the grounded theory approach in comparison with other qualitative methods and approaches is that the constant overlap and interplay between data collection and analysis phases is given specific procedural and rather formal form… Therefore, it is possible to say that theory is an outcome of empirical analysis." There is no public peer reviewed studies on how the Finnish insurance market operates and how this affects innovations. Using telematics insurances, which are widely known but not in use in the Finnish insurance companies, a new theory can be formed based on literature synthesis and the interview results. To do this, grounded theory is needed. This notion can be backed up by what Grbich (2012, p. 79) writes as well. According to her grounded theory is best suited to "specific environments" (which the Finnish insurance industry is) and when "there is little or no knowledge of the area", "all related aspects of interaction in particular setting is to be observed" and "when there is a need for a new theoretical explanation to changes in the field based on empirical knowledge". All of these requirements are fulfilled in this study. Though grounded theory is the base of the analysis in this study, advice from other qualitative sources has been used as well, whenever they have been applicable with grounded theory as it was explained by Glaser and Strauss (1967). This was done to get a big picture in what is important in qualitative analysis and what is not.

The coding style for this research mostly correlates to what Eriksson and Kovalainen (2008) describe as "selective coding". Some reflections have also been taken from Grbiches (2012) and Pulliam's (2010) advice on how to conduct coding in qualitative research in general from the parts that these advice correlate with the restrictions of grounded theory. According to Eriksson and Kovalainen (2008) in selective coding the level of abstraction rises higher the further one goes to the analysis. Also, in this form of coding, as the codes are being put in to the categories, one of the categories (the "core category") is selected to be the basis of the theory being formed. In grounded theory/selective coding the difficulty is to create the different categories and to find the

hypothetical relationships. This is why Eriksson and Kovalainen (2008) say that memos have an important meaning. Writing memos helps to conceptualize the emerging theory.

Grbich (2012) advice to "read and re-read your database" was helpful too – after the information was gathered the information was read again as well. This way it was easier to start to make the memos and to conceptualize the categories. Phillips (2010, p. 169) too mentions that one should "re-observe and reread all the findings." The purpose behind this is to find new insights by rethinking if there is something that was missed the previous times. (Phillips, 2010). The point is nevertheless that one should read the interview data enough to "get the big picture". The researcher should not instantly grab of something and follow that lead, but to make sure he or she understands what the theme of the dataset really is. As Phillips (2010, p. 169) puts it one should "keep a discovery mindset" and "be objective".

One aspect of grounded theory is, as we discussed, the fact that the whole research is reliant to the theory, which emerges from the data. Any theoretical framework would be built after this, since as Glaser and Strauss (1967) put it: "a pre-made theoretical framework will blind the researcher from the richness of the incoming data". However because of time management reasons and for the purpose of master thesis seminar and the schedule of the thesis process, a theoretical framework was done before collecting the data. Nevertheless, any effect by this was minimized by following Grbich's (2012, p. 61) rule to "recall ones research questions, theoretical framework, methodology and the literature" and to "decide what the most appropriate method for your data is". This meant, that the focus was on the interviews and they were looked with "fresh eyes", and only after understanding to which direction the theory is going the initial theoretical framework was modified.

Another advice from Grbich (2012, p. 61) is to "underline/color key segments and/or write description comments alongside the comments where further insight is useful". This and coding in general too was easiest to do with Atlas.ti software. The coding itself was done so, that as specific codes as possible were used, to get as many categories as possible as Glaser and Strauss (1967) suggest that the researcher should do. While coding an initial code from the interviews I would simultaneously write a memo which helped me to come up with the next code. These codes could then be arranged into families, which would then

be used as categories to help to formulate the final theory. This process has been depicted with the help of some examples in Figure 3.

Authors writing about coding or qualitative research find categorization as an important part of the research: Grbich says to attach overarching labels and identify subgroupings (Grbich, 2013). Pulliam (2010) calls this "identifying key categories". Stakes (1995) mentions conceptual categorization as an important part of thematic order too.

Finally, after the categorization was done it was possible to renew the theoretical framework after which it was possible to "conceptualize these groupings and link with literature and theory" as suggested by Grbich (2013). This is where the results of analysis takes place. After all the ground work had been done it was possible to start to link the findings to the theory and literature. At this point, it was possible to see how the different groupings linked with some of the main concerns about the adaptation of telematics insurances found in the literature. Also the theoretical framework was used to highlight how the findings are supported by existing literature and on the other hand, what makes the theory of this thesis unique.

The coding process of this thesis, with some examples from the findings has been depicted below in Figure 3. From the figure we can understand how the analysis was done: first the written down quotes were coded, then these codes where inserted into suitable categories, and from those categories the groups that are in the findings of this thesis have been constructed.

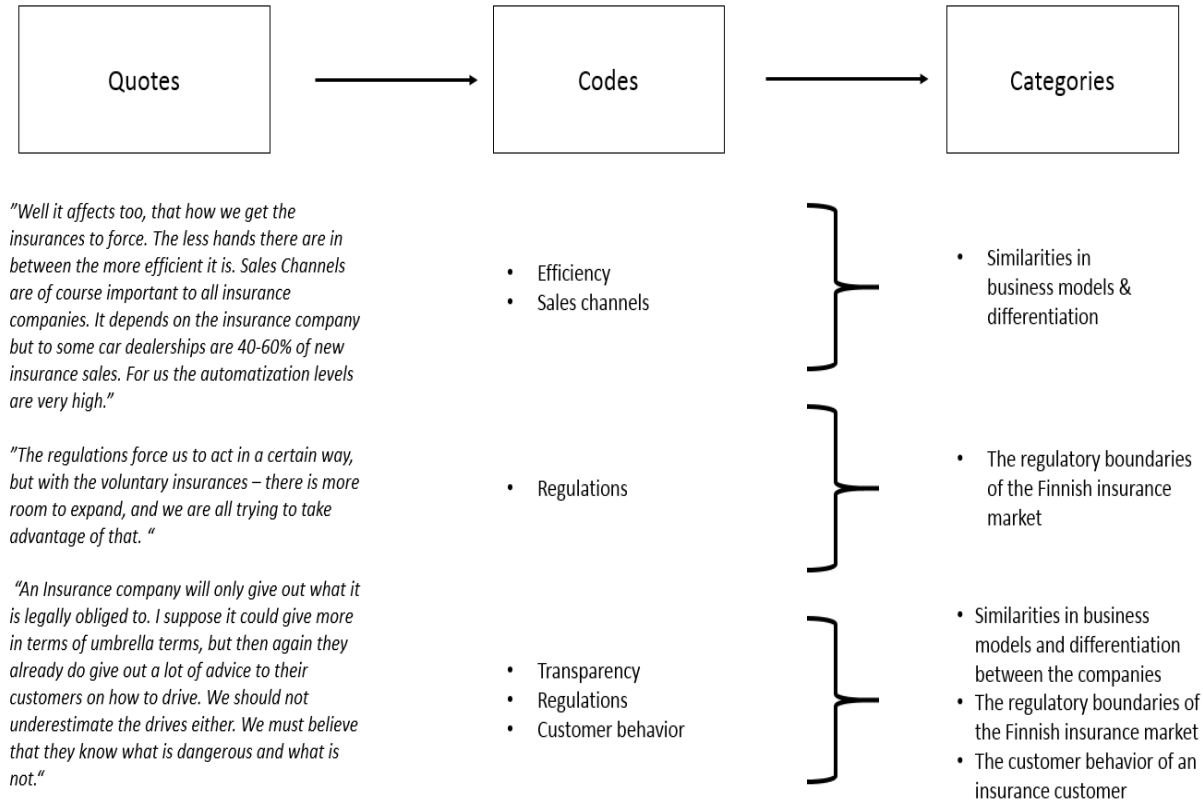

Figure 3: The coding process of this thesis

8.6 Discussion of ethics in this study

With interviews there are naturally always some ethical concerns. Most importantly, research-participant relations is an ethical topic which needs to be considered in this kind of research. Firstly, it was made sure, with each participant, that there was their consent to tape the interviews and it was told to them that they can ask the taping to be stopped whenever they wanted. Everyone was promised anonymity and so no real names of people or companies are used. Whenever real company names are used in thesis, it is because they have been mentioned as an example; any of those companies that have been mentioned did not necessarily participate in this thesis. The positions of the respondents were still vaguely mentioned, because it can make a difference who is being interviewed: it has meaning whether or not the answers come from a sales manager or from a CEO of a company. Confidentiality, consent and respect are all ethical issues in research which Kovalainen and Eriksson (2008) bring up as well. Farquhar (2012) too lists confidentiality, integrity and transparency as key parts of research ethics. He also notes that the researcher should avoid

doing harm to any of the participants. These problems were tackled by a promise that this thesis will be sent to them when it would be done. It was also made sure, that all the participants have my contact information, so that they know who to contact in case questions emerge.

9. FINDINGS

9.1 The Regulatory Boundaries of the Finnish Insurance Market

The regulatory boundaries of the Finnish insurance market is the first and the main category. What was found out, was that high regulations and especially the high coverage in traffic insurance make the Finnish business environment unique for insurance companies. The coverage is described even as the best in Europe or the whole world as In Finland traffic insurance is like a continuum to social security and made to protect third parties. This makes Finnish traffic insurance companies different than those US companies that were discussed in our literature overview of the insurance business. This also makes the Finnish insurance market more applicable with the theoretical framework created in this study, as the respondents see the regulations as a limiting factor in terms of new innovations.

According to some of the respondents, the insurance is mandatory for all car owners in Finland, which has led to saturation in the market and to price competition. Still, none of the companies have yet to engage themselves in telematics based car insurances which could make it possible for them to escape the price competition and to offer new customer value, as depicted in the theoretical framework and what was done by Progressive as Desyllas and Sako (2013) noted. Instead, what would seem to hold true, is that the price competition is not severe enough to hit the profits of the companies, and that holding on to the profitable business model is a more secure option, than embracing new innovations.

The regulations and the social aspect of the companies affect their brand too: no company is willing to risk their brand by testing the limits of the law. Even though insurance is a business of trust, if a company were to increase the level of justice with new innovation like telematics, it is better first to wait and see, that the legislation is surely ready for it. However, making changes to the law is not a fast not an easy task. For the lawmaker to

have an interest in changing the law, there must be a public debate about it. There can be constitutional issues, which makes changing the law more difficult and slower and some of the laws might come from EU regulations diminishing the local legislative power of the Finnish parliament. There is a change coming nevertheless: the renovation of the traffic insurance law by the beginning of 2017. This does not change the outlining principles of insurance business, but is to an extent more approving of telematics and vehicle automatization. At least when it comes to the renovation of the traffic insurance laws, it would seem that the companies have followed the advice of Paraskevopolou (2012) to actively informing the lawmakers.

Though the environment is restrictive (or perceived as such) this was mostly seen as a positive aspect. For a long time this has prevented outsiders to join the Finnish market, protecting the companies not unlike those of the medical industry as depicted by Hwang & Christensen (2008), or Herzlinger et al. (2006), raising the questions of the literature framework from this research: why to invest in something that might harm the current profitable business model, as none of your competitors do not seem to act, and outsiders "cannot enter". However, the respondents did note, that because of digitalization this can be changing, and other might in fact be able to enter the market. If these parties entering the market would do that with telematics, that would naturally raise questions of imitation as discussed in the theoretical framework.

Innovating new product like telematics can bring even more legal confusion according to the respondents: information laws, laws and possibilities on transparency and privacy laws are all questions with no clear answer to. These were nevertheless depicted as great challenges to US companies as well by Desyllas and Sako (2013) and Karapiperis et al. (2015). Still, in the US telematics based car insurances are on sale in Finland they are not.

The limits of the Finnish insurance market led to a state, where the competition happens in a narrow state. Risk management is the main component of competitive advantage for all the companies, as they all operate under the same main principle: many pay for the damages of the few. The industry also moves as one: if one of the larger companies is doing well, it usually means, that so are the others too. Car insurance is despite the saturation (or perhaps because of it) the main product of all the companies. Pricing, underwriting and investing processes all need to be efficient. Mimicking and copying other companies' strategies is considered normal in the business. To gain customers, pricing is

considered to be the main component. These were all very traditional ways of competing for the companies, as was brought up by Bickley (1967) too and highlighted by the respondents. The regulatory environment seems to have created a similar way of looking the business models as was presented by Lucas & Goh (2009) on Kodak: even if there is a new revolutionizing technology that could address customer value in completely new ways, it might not be attractive to the companies as it might risk "how things have always been done."

We can note, that issues like risk management, regulations and processes affect the whole industry so much that it creates actual and "safety" borders, inside of which the companies operate. In this category we have studied how the borders in the theory created in this thesis have been formed. In the following categories we will go deeper, in how the companies operate inside these borders, and how they perceive the possibilities, given outside the borders. The way the businesses are constructed is so, that they are all in a narrow area inside the borders, and they consider the move to outside the borders as too risky. For these reasons this first category was selected to be the main category, as it defines the other categories in a sense that Glaser and Strauss (1967) meant.

9.2 Respondents: the regulations and the Finnish car insurance market

Starting from this part of the study we will go through what the respondents actually said, to back up the findings discussed. All the interviews were conducted in Finnish, so in many occasions a direct translation is not used. This is, because a direct translation would lose some or all of the original meaning of the respondent. From here on, whenever a direct translation as accurate as possible from the respondents is being used, that part has been marked in italics. The respondents will be called "A, B, C, D, E, F" and "G", to protect their anonymity.

This is the first, and the main category which was found in the coding: "the regulatory boundaries of the Finnish insurance market". The name of this category means the regulations affecting the insurance business in Finland, what the companies think about the regulations and how they, according to the respondents, affects their competition dynamics. As was already argued, what becomes apparent in the answers is that this category is the biggest force explaining why the Finnish insurance market is slow to

change and fairly passive towards new innovations, especially when it comes to car insurances.

One of the core issues in Finnish insurance business is the regulation around it. The industry is highly regulated and there are limitations on pricing and other factors but also forced coverage. As respondent A put it: "*the legal obligations force us to act in a certain way…especially when it comes to the obligatory traffic insurance*". The same manager saw that the most restricting part in the law, that it makes the Finnish traffic insurance "*the widest and most comprehensive car insurance in Europe, as it has no limits on compensations and accidents can lead the insurance company to paying compensation up to 70 years*".

B had similar thoughts and named the Finnish traffic insurance to be "*the best in Europe*". He continued that the applicability of foreign business models to Finnish insurance market is therefore limited. It is difficult to say whether or not the Finnish regulation truly is the most comprehensive in Europe or the world – how to even measure such a thing? However, it is more important to note that the regulation is very comprehensive and that the managers can feel that it is even *the most* comprehensive legislation in which they and their company needs to operate.

All the interviewees except one brought up the importance of the wide compensation of the traffic insurance as a limiting factor. Interviewee C pointed out, that the obligatory traffic insurance is in a way "*a continuum to a person's social security*" and went on even further than others by calling the Finnish traffic insurance "*the most comprehensive car insurance in the world*". He, continued that since the companies need to keep a buffer in case bigger accidents happen (since they cannot be predicted beforehand) there must be a certain price level on the insurances. There needs to be enough payments, so that a Finnish insurance company can hold the buffer and be profitable.

The whole logic of a traffic insurance is different in Finland compared to other countries as we learn from interviewee C: in other countries people are insured, whereas in Finland the license plate is insured. The obligation of insuring according to interviewee C then again, ensures that many people have some kind of insurance and connections to insurance companies (possibility to sell more insurances to them). The traffic insurance in Finland is, according to D, "made to protect the third parties" in contrast to other countries where the target can be the insurance taker. The biggest possibilities for growth for insurance

companies C sees however "*in personal insurances, such as an accident cover or health insurances*" instead of in car insurances. Since everybody who owns a car has to take an insurance, the saturation level is high.

One aspect that derives from the fact, that the traffic insurance is so strongly regulated is, that the companies are not allowed to either over-price or down-price the insurances in the big picture, as stated by E. However, these principles are non-existent in voluntary insurances including voluntary car insurances. Traffic insurance can therefore be the product that draws the customer in but the better margin is drawn from the voluntary insurances. This can be applied vice versa as well: lowering the prices of the voluntary insurances helps to get the customers to pay the premium of the obligatory insurances. C nevertheless sees the issue differently: to him, *"the only things that government regulates in pricing the insurances is that accidents need to have an effect to the payments and that the pricing factors need to have a connection to the risk*". Essentially both C and E are talking about the same thing, but where other sees risk factors in regulation as a limiting issue, the other does not.

F is clearer about this. To him, the conservativeness and especially the laws around it restrict the business, and according to him selling insurances is "*a business of trust*". No insurance company is therefore willing to try the boundaries of the regulations because, they risk losing their reputation as a trustworthy company and losing their brand value. F sees, that, the new telematics-based insurances can increase the level of "justice" (which will from here on be a translation of the Finnish word "oikeudenmukaisuus" which could also translate to "righteousness" or "equity") among the customers both in insurance payments and compensations, but again, for this to be successful *"the legislation needs to be updated*" he states. What this means, is that according to F even if an insurance company can increase the level of justice with telematics, no action should still be taken towards the innovation before the legislation has been updated.

The law which regulates the obligatory traffic insurance is due to change at the beginning of 2017. The interviewees are waiting for it to be somewhat more flexible, then the previous legislation, D for example stated that "*the new law will be more applicable to new products such as telematics based car insurances*." According to E one should nevertheless not overemphasize what the new legislation will actually change: "*the new legislation is supposed to bring more openness and competition, but it cannot change the*

core principles. But it will give a possibility for better and more flexible models." He notes that the need for the reform does not stem just from telematics industry but the coming of the autonomous vehicles too.

The reform of the traffic insurance law has been an example on how slow and complicated the process of law reformation can be as stated by B: *"I have carefully followed the reforming of the law and I think it well represents how of a slow and massive project it is to change established laws. There might even be constitutional problems ahead, so it is not easy*." Some of the laws do not today even stem from Finland but "*the EU-regulations have had an impact too*" as pointed out by A. F continues, that if the benefits for the society are clear, then the legislation will be easier to modify, but this does require a public nation-wide political debate on what the society wants. All of these examples show, which large obstacles there can be in reforming the laws.

It seems, that the technological progress is driving an inevitable change to the legislation. A supports this and claims that the current legislation is enduring a hard pressure because of the changes in the business environment and is "*in need of the reformation anyway*". Then again, G notes, that the legislation has according to him, never stopped the industry from doing what they have wanted, and sees no problem that the legislation would pose for future endeavors. However, he was also the only respondent who saw, that legislation has little to do with his job, and said that "*I leave thinking of the law to others-I do not concern myself with legal issues, others can tell me whether or not something is doable or not from a legal perspective*." As G's job-title and duties are more technical than those of others (who hold managerial positions), his comments about this do not necessarily represent how legislation truly affect strategic planning from the managerial perspective.

This regulation is not necessarily seen just as an "obstacle to change" but can in fact have a positive tone as well. A sees, that because of the intensive regulation the Finnish insurance market *"has been safe from outside (foreign) competitors*." The fear or the waiting of the foreign competitor seems to be a major issue for the companies. However, he too sees that because of digitalization and the spread of the internet the obstacles for market entry have lowered significantly. This could mean, that "the outsiders" are already in better position to enter the Finnish market, and after reformation (lightening legislation) it will be even easier for them to enter.

Not just current regulations but future regulations are a concern to the companies as well. With telematics based insurances privacy laws seem to be a major source of uncertainty. What mostly concerned the interviewees, was that the regulations on personal privacy which seemed unclear to many of them. A saw "*the usage of information, the control of information and how it can be surveyed*" as problems which are still open and says they pose "*a real challenge*" for the insurance companies. One of the changes in the reformation of the traffic insurance law will be, that the different factors affecting the price are going to be "*more transparent*" according to A. Transparency, as we have discussed in the literature review, could prove a challenge to the insurance companies. According to F, the basic pricing factors should be given to the customers, at least in order to educate them if nothing else.

For C the ownership of the information, which would be gathered with the telematics insurances, is clear: "*the client owns the information*" according to him. He says that this is based on European regulations. E sees too, that the ownership is in the hands of the customer, but the insurance company has the right to use that information.

However, B sees privacy as a "*major question legally*" and something that definitely cannot be overlooked with the telematics based insurances. For B the ownership of the information belongs to the customer, but if the customer has agreed and committed to give out information to the insurance company then the information belongs to the company. According to D, this is just a matter of the agreement. F then again does not see the question of privacy merely as a question of agreement between the customer and the company, but also as a question on how far the company can go before some universal privacy laws, which cannot be overcome just with an agreement, are broken. He mentions that this has not been at least according to his knowledge, studied that much, and mentions the telematics based health insurances as an example.

So the regulations are according to all the interviewees except one, fairly strict, and if not in theory, at least in practice, a limiting factor. This limitation leads to the fact that the strategies of the different companies are very similar. Their attitude towards privacy laws seems to be puzzled and distinctive of each other.

G says, that the basic competition is about risk, and who is best at managing it. However he continues, that although it is at the core of the business, calculating risk has its limits. Companies cannot pay less and less payments forever, or they will end up with no one to

pay them back. That is because more compensations means more incoming payments as well. Also the combined ratio according to G goes in line with all the different companies: if one of the bigger companies is doing well, then so are the others too.

For most of the companies car insurances bring in the biggest part of their revenue. For this reason, when it comes to the different insurance products the car insurances are "*the flagship for all the different companies*" according to G. This possibly leads the companies to be even more alert with changes in competition with car insurances then other products. E notes that "*what unites the Finnish insurance companies is, that the car insurances make a large part of their revenue*". He sees, that in future there might be risks for the companies associated with declining revenue although the payment – compensation relation would become better. When cars become safer through telematics or automatization less accidents happen, which then leads to smaller premiums for the companies.

According to C, the similarity of the offerings does not concern only the old products however, but new ones as well. If some company makes a new successful product, others will follow according to him, or at least try to match the same customer need. This would according to him be true with telematics insurances as well: there would be small or no first mover advantage as others could soon follow behind. Also the basic principle is the same for everyone according to him: "*many pay the damages of a few*". In this sentence lies the logic of insurance business which was discussed in insurance literature review as well: to maximize the profits the insurance company should maximize the amount of "the many" who are paying and minimize "the damages of the few". The most efficient way to do this is through risk selection.

In an intense competition in a limited space, no "extra fat" can be carried around. E states this, by saying that "*what is important for every insurance company is to keep the processes as efficient as possible*". Although there can be larger accidents which affect the combined ratio throughout the year and are impossible to predict beforehand, every company needs to focus on two main processes according to E: the other being risk management (how much risk is the company willing to tolerate) and the other is the efficiency of underwriting. If other or both of these are neglected the combined ratio won't stay good forever according to him. He also sees there to be a tendency for Finnish insurance companies to copy the strategies of one another: if another Finnish company

makes a new innovation, it will soon be examined by the rest of the companies. This notion is shared by B, who thinks that "*it is a normal form of competition."* F too sees this tendency, and reminds, that the copying is not limited to pricing or sales strategies but also concerns for example pricing strategies or the terms and conditions of the insurances. He sees, that especially in car insurances "*the insurance companies move as one*". He notes, that with some larger issues like severe personal injuries, the industry as a whole does have, and needs to have, a single response to. F talks about efficiency as well and compares the processes to Toyota's lean production (although highlighting the distinction between the industries): using analytics correctly is important. Available data needs to be used well both in pricing and marketing. He also mentions risk management, and online-services.

D sees that "*the industry in Finland is saturated and that there are four different main processes which are important to all the companies*." Firstly, product development processes, secondly customer acquisition processes, thirdly insurance compensation processes and fourthly investing processes. He also reminds, that all information which can prevent accidents is important to insurance companies. All of this reminds of what others stated about efficiency. Everybody is competing in the same field with the same "weapons".

B too highlights the importance of fluency of the processes in the company. Both the insuring and compensating processes should be efficient according to him. He also reminds of branding by bringing up the importance of fairness in the business. For F the competition in insurance business is more of a price competition then competition of new products. To him the insurance companies in Finland are also mostly "*traditional*" and "*act in a certain way*".

As companies tend to follow the same path, the change seems to be incremental and slow. As mentioned earlier, A sees, that the regulations has been keeping Finnish insurance companies "*safe from foreign competitors*", but because of the internet and digitalization this might be about to change. And at least if there are no companies operating yet there *is "interest to do so*" according to him.

It seems, that it is not just that the insurance companies themselves who are deemed to move slow but to some extent the customers too. G notes, that the customers are fairly passive as well, and the renewal rates are low. For this reason all of the companies

generally strive for long-term relationships with the customers, as seems to be the case vice-versa as well, meaning that the customers wish to have long-term partnerships with the companies. He also reminds, the customers are fairly conservative too: the pricing for competition has been allowed only from the mid 90's, which means, that the current state of competition is still young for both the companies and the customers.

9.3 Similarities in business models and differentiation between the companies

In the previous category we already noticed, how regulation directly affects the processes of the insurance companies. What was also stated by all the respondents was that the insurance companies strive for profitability in Finland. This means, that they do not underprice their insurances to get customers, which could be a possibility in insurance business, as the companies could patch the losses from low insurance premiums with investment profits. In Finland however, the companies are profitable not just because of the investments but because of the insurance premiums as well.

To keep the company profitable in terms of insurances, risk management and risk scoring have an important role. Telematics based insurances could help with this according to all the respondents, but the new technology also brings up a dilemma: the insurance companies need a critical mass to sustain an insurance. However, if they get a critical mass they (normally) get more accidents too. However, if telematics based insurances lessen the amount of accidents, the premiums of the insurances will go down too. So the dilemma in this is, that accidents are very costly for the companies, but still, many accidents usually means many clients too and therefore more revenue. Although the size of the customer volume for new innovations no doubt is a serious question for the insurance companies in Finland, this still points to a situation of innovation and profitable business model as presented in the theoretical framework. Investing in telematics carries a risk of reducing the current profits.

Still, if the technological change is inevitable, as was claimed by several of the respondents, one should try to take advantage of it. This then again leads to similar questions over imitation as illustrated in the theoretical framework: if this inevitable technological change will bring new threats such as outside competitors to the market, perhaps they should be prepared to imitate. Imitation then again, always needs some amount of innovation as stated by Pepall (1997) and Jenkins (2014). Being ready to counter these new entrants through this method, would surely require some changes in the

organizational culture, if the perspective currently is that "the current business model should not be jeopardized in any circumstances".

Customers can be gained from other companies through extra offerings, price and customer experience. However, these extra offerings usually mean something extra in an insurance, for example a rental car service in case of an accident. These are easy to imitate and in reality all the insurance packages which are offered are very similar to each other. Telematics might help to move from current homogenous offers to heterogeneous offers, but only if the product is not imitable, in which case in principle heterogeneous service will become homogenous. Sales channels are a possibility to differentiate and an important part of the business model of every company. To gain efficiency, every possible part of the business should be automated. Some also claim, that big companies are built to address the big masses, while the smaller companies are for niche markets. The incremental rates of innovation are very small in these methods, and easily imitated by others.

One aspect, which is very important as an important building bloc of the business model of an insurance company, and very much highlighted by the respondents are the sales channels. Most important ones of those for the insurance companies are the car dealerships, other physical locations, phone lines and the internet. Again, proving a very similar type of competition between the companies. True differentiation is very small and comes mostly from focusing on special separated segments.

Innovations like telematics were seen as a way to differentiate against others, according to the interviews, but it seems, that the companies have been busier to develop them in the health insurance industry than with car insurances. When asked what the respondents deemed as interesting innovations in the Finnish insurance field in general, most of the answers were about health insurances. The field of health insurances was also said to be much less contested than that of the car insurances. Also, car insurances was said by some to be the biggest source of income for all the companies. This would be in line with the theoretical framework and especially with theories on business model innovation (Kim & Mauborgne, 1999. O'Connor & Rice, 2012 and others). Insurance companies in Finland have been unable to saturate the health insurance market: there is little risk, of "ruining" the profitable business model, but a possibility to gain a much larger market share, by using innovative methods to find or create customer value. Perhaps even test business models in that market as proposed by Chesborough and Rosenbloom (2002). Testing with

car insurances would be testing with the biggest revenue source of the companies, leading to a situation, where whole company will change meaning questions from the theoretical framework would be very relevant for evaluating that.

Traditionally looking for clues from other countries has been difficult because a) of the unique Finnish business environment and b) because of transparency issues. Previously it has been hard to find out about foreign models even if one had wanted to. However, Canada is mentioned as a possible model at least when it comes to pricing the new insurance. The Finnish insurance companies should still look for signs in the foreign markets in what could help them to differentiate, since in larger countries, the markets are bigger, and it is easier to get a niche-product in the market and still get enough user to get a critical mass. Analyzing the foreign markets might help the companies to prepare for the future where, they might need to imitate a first-mover. Also, transparency and the internet work for foreign competitors too, and could enable an outsider competitor one day.

9.4 Respondents: differentiation and business models

What we have learned in this category is, that the companies do not really differentiate themselves at least when it comes to car insurances. This has led to what some call "fierce competition" in similar offerings. Despite the fierceness, most of the companies seem to benefit from the status quo. Now that we have discussed these issues, we can take a look on what the respondents said.

A notes that every company, regardless of the industry, strives for profitable business and so this true for insurance companies as well. If insurance company wants to be profitable it needs to price according to the correct risk. It does not matter which insurance is in stake, but it has to be competitive from customers' perspective and bring a good enough margin for the company. He continues though, that "*at the current state of competition it can be hard to price the products exactly according to the risk, as the urge to attract new customers with higher discounts might arise and then years later the company needs to clean up the insurance base*".

B sees, that "*the competition is fierce, but that the business needs to be profitable, so the pricing cannot be too low*". There might be some un-profitable parts supported by other more profitable parts, but overall the business should be profitable she states. C supports the claim of the importance of risk in insurance business: "*to maximize the profits an*

insurance company must be efficient in risk management". G agrees with this statement as well, except for that he sees, that there is not a real pressure to keep prices down in Finland if one compares it to the UK for example. Still, G sees too, that competition in insurance industry is all about risk management: the company should simultaneously strive to maximize the incoming payments and to minimize the paid compensations. To achieve this, the company should excel in customer selection: the risky customers should either pay more for their insurances or choose another company. This is also the bottom line on what the business models of the companies are built on.

The new telematics-based insurances might help according to C and B: the technology would help the insurance company to price the products more efficiently, giving the low-risk customers low prices and driving the high- risk customers away with high prices. In other words: risk management would be more efficient. A sees that both with business-clients and consumer-clients it would be easier for the insurance company to make the insurances profitable with the help of telematics. However, according to A, it is important to find the "smartness" in the system. The insurance company needs to be exact so that there won't be problem in staying profitable with the insurances. The problem according to A with telematics based insurances is, that does the lowered revenue (as the prices are dropped) cover for all the compensations. So do the damages drop as the prices drop too? If not, how the lower prices will get covered? The basic questions of insurance industry will not disappear with telematics based insurances according to him: the risks must match the payments.

G shares this concern. Although it is good in general that the company does not have to pay for compensations, it simultaneously means, that they will get less revenue too. This might mean less profit overall according to him. This demonstrates well how there are no short-cuts in risk-management in insurance business: maximizing paying customers' means increased revenue, but also increased customer base means increase in compensation payments. If the large customer base was acquired with cheap insurances (remember, price is the main factor in acquiring new customers) will the premium cover the costs? On the other hand if the compensations are minimized how long can the company keep up a large premium? Maximizing paying customers and minimizing compensation seems to lead to efficient risk management.

C notes the importance of a sufficient customer mass with telematics (or any other insurance type) "*there needs to be a critical mass of customers to cover the compensation expenses, but how many of the customers are ready to use the new insurance?"* In some countries certain groups of people, like young drivers are forced to use telematics (enabling a critical mass) but this is not necessarily the case in Finland as we will discuss later. C later points out, that there is no point in going after the early adopters – the critical mass will not be acquired with them but with regular people, who are a much larger mass. B notes, that offering cost reductions only to some would not necessarily cut it: some customers would need to get a raise in their price too. This could possibly make getting a larger customer base more difficult. The question which rises from these points is: why would anyone voluntarily choose telematics if it would rise their payments?

Also, even with telematics, risk scoring needs to be done beforehand as F states. An insurance company needs to know what high risk behavior is and what is not, new tools are perhaps needed to do that. The questions are to him: "*what kind of driving brings more risk, but not more expensive risk*?" and "*what kind of driving brings more and more expensive risk*?" D thinks too, that telematics will make the risk adjustment better, but that" *the challenge is how to deal with the incoming information, and how to keep customers from changing company if they do get into an accident*". Clients already face higher payments after an accident and are eager to switch company. With telematics the risk for the insurance company seems to be, that this situation does not really change, but that they get to collect a smaller premium before the accident making it even more expensive.

Nevertheless A sees, that although there are both threats and possibilities available with the new technology, "*there is no possibility to look back or stick to the old ways*". Continuing, that if a company does so, it will disappear. E sees the possibility in telematics-based insurances to reduce serious accidents and to lower the amount of compensations paid out through educating the customers with the new system. Then again, a discount based model would reduce the revenue. The dilemma of "reduced accidents leads to reduced revenue" is not just a question of telematics based insurances, but as E notes, the autonomic cars are on their way, which will be a big question to insurance companies.

Risk management and risk-adjustment are both really important for insurance companies, but so is customer acquisition. As A states, "*everybody wants new customers, but so does everyone want to hold on to old customers as well, since it is much cheaper to hold on to*

an old customer than to get a new one". However, he also reminds, that "*when we start to compete for the old customers with others the margin will get very small already*." This is, because as we have discussed, the easiest and most efficient way to "lure customers in" is with price.

Another thing with customer acquisition pointed out by G is, that the number of insured objects (cars) will stay more or less the same, but that the company can try to offer new services for the customers, these services can mean for example new securities in voluntary ("kasko") car insurances. G says that *"a natural way to grow is to take customers from other companies"*. G continues that the key issues in customer acquisition are: 1)" *to have something extra in comparison to competitors*" 2) "*have the right price"* and 3) "*good customer experience, especially with compensations"*. Price refers to the risk management, good customer experience can be achieved with efficient insuring and compensation processes, but to offer something extra, is easier said than done. Later he does point out however, that with services / extra offerings in insurances, they can offer something extra for the customer. He mentions continuation security (rental car), insurance against elk accidents, and windshield cover as possible "extras" that the insurance company can give for the customer.

The telematics-based insurances could offer solutions to "finding something extra", as it could be something completely new, but also helping with price reduction and customer experience. F states risk-calculation and availability of data as the key factor in insurance business which are something telematics could be helpful in as well. Offering telematics would mean "*a shift from homogeneous offers to heterogeneous offers*" as C puts it. There would be more offers which could be presented to the customers. However, as stated previously as well, C notes that telematics insurances won't change the basic principles of insuring: *"many pay for the damages of the few*".

B sees, that the markets are not fulfilled in Finland in the sense, that there is room to develop the products all the time. This is especially true according to her with health insurances. B sees too the different services (parts of insurances) as a way to differentiate the company with car insurances. Others could offer a rental-car service in their car insurance for example. These seem nevertheless small differentiations, which can be easily copied by competitors if needed.

One important aspect in the business model of an insurance company, which was brought up by many of the interviewees, are the sales channels. A notes, that there are three different main channels: the phone channel, internet and still the physical sales locations (although he does question the future of this channel). The competitive advantage then depends how a company decides to focus on these different channels and what are the costs of keeping one up. For A the sales channels are seen as *"the most important resource in competing against others*". This is very logical: since the products are essentially the same, and price is highly competitive, to reach the customers better than the competitors can prove very advantageous.

C agrees and adds, that channels affect the buying behavior of the customers, for example it is typical, that a customer can change his/her insurance company when purchasing a car from a dealership if getting a good offer. C shares with A the view that the company strategy is partly reflected on which sales channel to invest in. E takes this further by stating that their choice of keeping physical locations is a competitive advantage for them, and sees sales channels as "*a critical factor*" for any insurance company nowadays. He sees too, that UBI-based products will have an impact on sales channels, especially the traditional ones. D notes, that "*organizing sales channels to sell telematics based insurances is going to be a challenge*". Where E emphasizes the importance of traditional sales channels, F then again notes that digital sales channels and services are the core of their services. It would seem therefore, that sales channels act as a way of differentiation as well.

As the tight regulations and traditional conservative atmosphere of the industry molds the companies to resemble one another, so do their product resemble each other as well. A sees, that "*the product portfolios of each company have been organized in a very similar fashion*", the differences are in price and some possible additional service offerings which are connected to the insurance. As C noted with possible first-mover advantage with telematics, the offerings are homogenous and supposedly, they will eventually get homogenous again, after the first product has been launched. E brings up, that it is not just the product itself that the customers seem to be similar in each company, but they have certain expectations on how the processes will go further in the company, meaning insuring and compensation processes. In other words, they expect certain processes to be and act in a certain way in every company. According to B, the new telematics based products *"won't change the setup of the competition, but offer new basis on creating*

offerings." As F tells, especially the car insurance offering are very standardized, as each company has a similar bonus system and the "track record" used to count the bonuses is transferable between companies. He sees too, when it comes to UBI-insurances, that the new products would compete with the older ones, possibly displacing the older offering, or in practice becoming so similar to the old one, that it would be hard to tell apart. So even if telematics based insurances are objectively something completely new in the Finnish markets, the question remains whether or not it will be different enough to give some company a competitive advantage which would not be possible or hard to imitate.

Efficiency is one of the core issues in every part of insurance company's business model. A notes, that "*the automatization rates must be high – the less people there are putting a new insurance to be in place, the better*". From customers perspective paperless service is part of this efficiency. Also the compensation processes should be automatized as much as possible. To both of these processes, the insuring process and the compensation process, digitalization offers tremendous new possibilities according to A. B says automatization is "*the most important part in making processes efficient*". Not everything is possible to automatize, but all the basic things, she adds. Naturally automatization also makes it possible for the company to make savings in employee costs in terms of number of employees and time spent in compensation processes for example.

G highlights the importance of compensation processes. Everything needs to go *"smoothly"* and efficiently. To achieve this, the insurance company should simplify the terms and conditions as much as possible according to him. The processes should be dynamic and *"all the loose parts"* should be cut off. Efficiency in risk calculation is also very important according to G.

D agrees on this and says that efficiency is everything in the business. He brings up two different aspects: firstly the expenses need to be minimized and secondly the terms need to be as simple as possible. The simpler the terms the faster the compensation the happier the customer.

One aspect of the stagnation of the competition is, that the competition is concentrated around big three companies, at least according to G. E notes this as well, and sees, that the "big three" have similar ways to compete, and then the smaller companies try to compete with niche-offerings. B sees, that "*it is a shame if the competition revolves only around a few big players"* – he sees that it is good for the whole industry if there is a proper

competition. However, he reminds, that the small companies are able to efficiently compete and not just follow the larger ones. Though they say this, it is still difficult to see, that the larger companies' offers would differ that much from the smaller companies. They just have more resources to invest in sales channels and to better calculate risk. As G puts it "*a larger company might have synergy-benefits from all the different locations. There are also more resources in a larger company to select the right customers by offering them the right prices. A larger company, especially if a part of a conglomerate, can also offer cheaper prices."* He adds still that "*some of the larger companies are closest to the hypothetical state where the payments would match the risk perfectly."*

A sees, that Finnish insurance companies do not have a tendency to copy one another's strategies, which can be seen from the fact, that companies have different attitudes on sales channels – some companies have many physical locations while at least one is completely online-based. However, as we noted in the previous category, sales channel options are nevertheless same for all: phone, the internet and physical locations. Differentiation then rises from how the companies decide to weigh these options.

G notes, that "*one way to differentiate is to add up services*". So the amount of insured objects (cars) won't go up too much, but the insurance products can be differentiated with added services. The products cannot be completely similar than those of the competitors but that there needs to be something extra. As we discussed earlier, these probably are something which are easily imitated by the competitors.

Innovations can be a way to differentiate of course. According to G the most space for movement is in other areas then car insurances however. He mentions OP-omasairaala (a hospital-chain completely owned by the OP Pohjola insurance company) as a new innovative way of doing insurance business. This clearly is innovative and something that is hard to imitate, because it requires significant investments, but again, it mostly has to do with personal health insurances and health insurances and less with car insurances. Of course, in case of traffic accidents where the insurance company is liable to compensate, they can try to direct the patients to their hospital, where they can overlook the efficiency of the doctors and the treatments to save costs, but mostly this shows how the companies strive for the uncontested market of health insurances in comparison to the saturated car insurance market.

C states diversity of sales channels, and a wide array of products as their competitive advantage against others. From processes, he mentions the compensation process – that 95% of the compensation applications are accepted. The fastness of the compensation process and the coverage of the insurances are both important competitive advantages according to him. As a new innovative way to compete he notes the OP-syke health bracelet by OP Pohjola which measures how you live affecting the price of your life insurances. Once again, bringing up the possibilities of the health insurance market.

B sees, that a smaller company must profile itself somewhat differently in order to survive against the larger competitors. She sees that this could mean offering personalized services also for those customers who are not ready to move completely to the digital-era. However, she does note too, that today every insurance company does need an online presence as well. According to her, "*there is also readiness to try on new innovations for example telematics based car insurances in small companies as well*". What can be taken from these statements, is that large companies can strive for the economies of scale, concentrating on efficient risk management whereas smaller companies, can strive for niche-segments, like customers who need more personalized service. Is telematics for the masses or for niche-segments, like the tech savvy youth, depends on how the product is designed.

One way for the companies compete against one another and differentiate is to focus on certain segments. For example A says that the company focus could be on entrepreneurs which can have a positive impact on the company brand as well in personal insurances, and not just in company-insurances. For D one of these "special segments" could be people who are not digi-native or trade unions to name a couple examples.

F sees that small companies need be somewhat more innovative than the big ones. He mentions too that "*although the smaller companies have less money to use in product development they are more agile, and it is easier for them to bring a product to markets*". For their company, the online presence (sales channel, customer service) is their biggest competitive advantage however. He mentions POP-insurance company new kilometer-based pricing factor as a new innovation in insurance field. He sees the telematics based insurances as a new possible way to gather more information of the customers, which can then be used as a competitive advantage. For a smaller more agile company he sees the technological advancements as competitive advantage, since with them comes new

opportunities. As a new innovative way of doing business he mentions an anonymous health insurance company which always pays the amount of the diagnosis, not minding if the customer has any other insurances. From his answers, we can note that even though smaller companies are describes as "more agile" or that they should "innovate more", the main competitive advantage are sales channels and customer service, which are basic building blocks of the business model of any company as we have discussed. The kilometer-based pricing factor is something new, but it is also very easily adaptable by others. Here again, possibilities in the health insurance market are brought up.

D sees both online presence and targeted customer groups as competitive advantages. He also sees, that it is easier for a smaller company "*to give face to the company*" and to "*serve the customer how he wants to be served*". He sees, that this can improve customer retention rates too. According to D to some extent there is copying from other competitors when it comes to strategy. He mentions OP hospital and Lähitapiola health bracelet as new innovative solutions. Again, niche-markets for smaller companies are recommended, and possibilities in health-insurance brought up.

To understand the limitations of the Finnish insurance companies it is good to look abroad – to see which possibilities are limited and what makes the Finnish market unique. Although one could argue that the Finnish companies are very similar now, A thinks the field is much more diverse now than what it was five years ago. He also wonders what will happen if a foreign/out-of-insurance player would enter the field. He notes, that "*the competition is not merely between different insurance providers but between all service providers."* When it comes to taking ideas from foreign companies A reminds, that some years ago the transparency was weaker, so even if one had wanted to learn from foreign companies it was harder. Now, thanks to digitalization and the internet, the processes are more open according to him: not necessarily all core activities, but the basic logic behind the business. A finds it very possible that a foreign non-insurance company can enter the field and that every company should be prepared for that. He does not see, that "*keeping 300 physical locations around Finland would be in accordance with the future*" implying to the change brought by digitalization.

G sees, that the pressure to change the traditional business models will come from outside and most possibly in the sense, that the way people use cars and the vehicles themselves will change. What he hints here, is not just telematics based insurances, but automatic

vehicles, shared cars and other changes in the industry which are probable to happen in the future.

What C noted earlier is important here as well – the regulations in Finland are very different in comparison with many other countries. Whereas in other countries a person is insured, in Finland is the register plate. When someone (whoever) drives, the third parties are always protected. The coverage of the Finnish traffic insurance therefore limits the applicability of other countries' insurance business models to Finland. C sees too, that with telematics based insurances for example, the Finnish customers have not yet developed a need for it. He says that "*Finnish drivers have much smaller tolerance for risk than their foreign counterparts, they are willing to take only the smallest amount of self-risk whereas foreign drivers are ready to take the higher self-risk.*" The foreign drivers therefore believe, that they have the capability to affect the risk and the amount of accidents they get into. He also sees, that the national business environment has an effect on the adaptation of telematics: in Italy the technology is in wide use, but there, according to C, "*up to 60% of accidents might be framed*". He continues: "*in Britain, the payments for young drivers have used to be very high, so they offer telematics to them, but after the young drivers have proven that they are not among the highest risk group, they give up telematics and switch to regular insurances*". So even if the technology is in wider use in other countries, the Finnish business environment is regarded as an obstacle.

Despite the challenges in the Finnish business environment, C still sees a possible model in Canada, where the customer needs to know what the maximum price for the insurance can be. He thinks in Finland this could be done as well, which means, that the customers could then be offered either a) so that the beginning price would be higher than a normal car insurance would, and then the customer could gradually lower the price or b) there is a certain level of risk that the customer must achieve, or he/she loses the right to use telematics-based insuring and is switched to regular insurance.

E points out as well, that we are living exiting times, and it is very possible that in the coming years some foreign or outside the business operators might come to the Finnish markets. E sees, that although the regulations and business environments differ from country to country, it is still useful to look across different countries; "*the sheer volume of insurable objects in countries like Germany, France and Italy is so much bigger that product development is in another level in those countries as well.*" It is a good reminder,

that the market size of Finland is much smaller than for example in those countries or the US or UK too. A niche in Finland cannot necessarily provide the critical mass needed, but in a larger market, the situation might be very different.

B says that they only look to abroad in a broad sense. They have their own business model which is not necessarily compatible to anywhere else. F then again actively tries to look for foreign models or ideas which could be replicated in Finland. He does note, however that the regulations on traffic insurances are a limiting factor. He sees the regulating as a good thing overall, representing the nature of a constitutional state ("oikeusvaltio" in Finnish). He does see, that "*the regulations on insurances concerning people are much tighter than those that have to do with property*". Which is interesting when one remembers, that health insurances have seen many more innovations than car insurances in Finland, despite the fact that they have much to do with people than property.

Some other differences in Finland according to D is the "length" of the insurances. In Finland the insurances never end, unless one of the participants (the company or the customer) ends the contract. In other countries then again the contracts can only be made for a limited amount of time. Also, in Finland the insurance companies are responsible for the sales of the insurances and the role of brokers is small in comparison with the UK for example, as D brings up.

Because the differences are so small between the companies, the competition gets narrower and can seem tough from some perspectives. A states that the competition is tough and it is getting even tougher. He *says "the companies are competing fiercely for the consumer clients."* This situation has not been around for the last 10 years, but he sees that in the last 5 years the competition has "exploded". C too sees that the competition is "getting tougher" and notes that with car insurances there is saturation. Perhaps people take more comprehensive insurances but overall there is saturation.

Respondent E sees that the competition has gone "tougher" during his career in insurance field. Especially the bigger companies tend to compete harsh against each other and then the smaller counter with niche-type solutions. The competition is mostly based on price. "*In some voluntarily insurances there might be pressure to lower prices*" he adds later.

D sees, that from salesman perspective the competition is always tough, but that in wider picture the Finnish market is still fairly calm. There are no foreign or outside operators yet, and there is still "unconquered" market overall.

9.5 The customer behavior of an insurance customer

In this category we learnt, that since customer retention is very important for the insurance companies in Finland. However, the companies do not get many chances to affect the customer satisfaction. The two main occasions for this are, when the customer buys the insurances and when an accident happens. The companies can prepare for the accidents beforehand: simple terms and conditions make the compensation process more efficient and make the decision more understandable for the customer. Additional services like car rental service might come as a surprise for the customer when the accident happens, which may lead to a positive experience. If the insurance is adaptable to the needs of each individual the customer will get a feeling that his/hers needs are met, again resulting in positive experience. Nevertheless, since customers do not really think their insurances that often, because rarely they have anything to do with them, price is their main concern. Another aspect which affects their way of thinking is that when it comes to insurances one of the main factors in their behavior are easiness and laziness. These hold true especially in the coming telematics insurances: the customers might not want to change their driving behavior to get a lower premium if they can just change the company and keep driving like they always have. Also, any installation or use of the telematics equipment might be too much for them. This is why the telematics devices should be unnoticeable and as easy-to-use as possible. All these concerns increase the ambiguity linked to telematics insurances by the companies, surely decreasing their level of confidence in the new technology and the changes it would require in their business models. As was stated by Von den Eichen et al. (2015) confidence is a mandatory requirement for successful business model innovation.

The Finnish customers also care much more about insuring their property than themselves, which can be seen from insuring statistics. Justice is one of the core values for them, and as insurance industry is a "business of trust" it is important from the companies' side to appear as a side that upholds the bargain no matter what. For some customers privacy is a major concern, which could be a difficulty with telematics. Price is still the main factor for them however, so possibly most customers would still value price over privacy. As explained earlier, telematics could provide a solution for the low prices the customers want in their insurances.

The main thing to understand with customer behavior in this study is, that although it is brought up many times by the respondents, and eventually it has meaning on the success or failure of a possible telematics-based product, it does not explain why the innovation has not been embraced yet in Finland. The comments on privacy issues and the customers' willingness to easiness with their insurances tells mostly about the ambiguity linked to the possible telematics-based product. Despite all this ambiguity, price came up in all the interviews as the main component of customer value, and it is also one of the main benefits of using telematics based insurances for the customers. In the US, where price was the main value as well, similar types of ambiguity on customer behavior has been successfully dealt with. Another thing is, that with business model innovation, at least according to Sarasvathy and Dew (2005), O'Connor and Rice (2012) and Chesborough (2010) customer value is mostly created, not found in business model innovation, meaning that the decision to launch the product or not should not be made solely on the current customer ambiguities. Then again, with telematics, the price is a clear component that could be better addressed with the new technology, and other value from the technology could be created after the product is launched in form of new services (as Desyllas & Sako, 2013 noted). Still, the ambiguity of the customer reaction is not helping if a company is not confident enought to strive for innovations in the first place.

9.6 Respondents on customer behavior

Customer retention is important part of the insurance business. According to A customer retention might be more easily achievable, if you focus on their specific segment: for example entrepreneurs might appreciate an entrepreneur focused company. A reminds us as well, that to change your insurance company in Finland is extremely easy and it is easy for customers to follow the lowest price. This naturally, poses a great challenge for all the companies in the field and makes the competition more price-sensitive.

Despite the chance to change their company quickly, G sees, that customers nevertheless are not too eager to change their company, and want to focus on long-term relation with the company, just as the company want with the customer. However, G continues, that it is important to show for the customer in a compensation situation, that they will get their money not to feed the "*an insurance company never refunds anything – attitude"*. It seems, that insurance companies have two important times, when they can influence the customer satisfaction: when the customer buys the insurance and when an accident happens. G sees,

that additional services might help to improve the customer experience. For example, when a customer's car breaks down and he gets a rental car to use instead, he might actually be surprised how fluently everything went. The customers do not really think about their insurances that much, so when something actually happens, everything can go better than expected leaving them a feeling of relief and happiness according to G.

C conversely sees, that the retention rates have been lowering when compared to the past, and that because of this, offers with low rates and loss leaders are more common today. C does not incline that telematics based products would help with customer retention, since if the big masses start using the product, they will have several options (from many firms) to choose from. This is about what we discussed earlier as well: even if the offer is in nature heterogeneous, there is risk for it to become homogenous again if everybody offers a purely individualized product for the customer.

C sees, that there are two main elements in customer satisfaction: first one being the feeling that the customer got himself covered (the insurance coverage is wide enough / enough offerings), and the second one is the smoothness of the compensation process after something happens. C reminds, that insurance business is a business of trust, where the selling company is only selling a piece of paper and must therefore hold to its promise. E sees then again, that ""safety" and "*the continuity of normal life*" are the most important aspects for customer satisfaction. And for some customer he thinks that simply the will to protect their property brings them satisfaction.

F sees, that affecting the customer satisfaction side is difficult, since the customer emotions towards an insurance company only come about when an accident happens; and then if the company does not compensate, the customer might see the insurance company as a "*large and greedy company sitting in top of a pile of money*". This relates to what we discussed about making the terms and conditions as simple as possible; it does not just shorten the time to make compensation decision, but it also makes it more understandable for the customer why a certain decision was made.

Finnish consumers seem to be mostly interested about price when it comes to insurances. E sees, that "*the competition in insurance field has been tightening in the recent years and this can be seen especially in price competition."* He says that mostly the competing is about price. To G the price sensitivity of the customers is seen especially in the obligatory traffic insurance. Since the insurance is so regulated, the company does not really have any

other ways to compete with it than price. C also states, that "*the customers are good in knowing how much they should pay for an insurance*. " Whereas some years ago it was difficult to compare the prices, today it can be done online fairly easy and fast. Price might be the most luring aspect of the new UBI insurances as well according to B. Possibly even outweighing the concerns of privacy. According to F car insurance sales is all about price, and if one wants to participate in it, one needs to be competitive with price. He notes that the Finnish bonus system makes it very easy to compare prices among different companies and that the consumers are very price aware. Being the most affordable company in some categories can pay off according to him. F sees price reductions as one of the most important parts of UBI-insurances as well.

D notes, that the company does not necessarily have to be the cheapest but not the most expensive either. One car model can be expensive for others and affordable to some. Price will be an important driver for consumers to take UBI according to him, and to be able to sell the product the price needs to be competitive. B sees price as such an important aspect that customers would change their driving behavior if they would get lower payments. For F this is not as clear of an issue, but still he thinks it is possible, although he does believe that some people will never change their behavior.

The price of the insurances, the reputation and the overall brand image of the insurance company are surely all factors, which affect whether or not the consumers will buy an insurance. But when it comes to telematics, the easiness to install the measuring device is an important factor too. According to A, *"it is a big issue for a customer if he or she must install the device themselves*". A believes it should be someone else who does that, but believes simultaneously that mobile devices such as smartphones will be the future in this, since they require no installation from anyone. It is hard to really affect the relationship that people have with insurance companies, which leaves price as the most important component in choosing an insurance company / insurance coverage. According to A this will be the case with telematics based insurances too.

"*When taking a new product like UBI to use the insurance company needs to take into consideration the old insurances*" D reminds. The company cannot just cancel all the old insurances or force them to use UBI. The "bad drivers" are one question too: who will insure them if they are deemed uninsurable with the new UBI insurances? G talks about this as well and wonders how the customers will accept the new pricing policies. Is the

only way to get the bad drivers to take the new insurances if they (telematics) are enforced as default-option? There are many question, to which answers are hard to find before the product has been launched.

Price is the biggest issue in any insurance for the customers, but with telematics the measuring device itself might cause problems. It is not just the installation that should be easy according to G, but the device should be small and mostly undetectable by the customer to a level, that it does not disturb him or her in any way. And on the counter side: "*the customer should not be able to affect the way the machine operates*" he says. B sees too, that if the activation of the device means any extra effort for the customer, it will get more difficult to get him use it. To get the great masses, the easiness and effortlessness of the technology are the most important aspects according to C. E sees that any black box device solution is too complicated for the customer and sees an application or a plug'n play type of solution more feasible. "*Everything depends on the reward that the customer gets*" he ends.

D notes, that in the next generation cars, the telematics devices are built-in, but that in Finland the average age of a car is so old, that there will be much to do in Finland if the all the cars were to be equipped with the devices or to be replaced with next generation cars. He also adds later that UBI might just take over the current bonus-system, which already to some extent punishes some and rewards others.

As G mentions, another problem is that customers know how they drive. Therefore they know whether or not they should give out their driving information to an insurance company or not. This point relates to the question: "why would the bad driver choose telematics if given a choice?"

C shares this view. He sees, that for other people the benefit is clear, for example those who do not drive much, but then again the negative effects are also clear to those who do drive much. According to him, research tells, that the way or style of driving, does not usually have an effect in general on accidents except for some small more extreme segments like young BMW-drivers. Therefore the biggest indicator of risk, according to him, would be how much one drives since it is clear that for one who drives 300 days a year it is more probable to get into an accident than to someone who drives 100 days a year. However, it is hard to say whether or not people would lessen their driving even if they would get price reduction in their insurance. He does not see either that those who do

drive worse than the population in general would change their behavior since "*the biggest driver behind consumer activities is laziness – it just easier for them not to change their driving habits and get a regular insurance."* According to C the new UBI products would have a different target segment than the old insurances too, which raises the question, whether or not it can reach a critical mass of customers to be viable offering.

E thinks there is a market for telematics based insurances but that the customers most probably know if it will benefit them or not beforehand as well. B comments on the dilemma too: "*why would anyone who has a possibility to both, traditional and UBI-insurance take UBI, if the UBI would increase his insurance prices?* "As D notes, the problem with the new insurances are the "bad drivers" and how to insure them.

One possibility with UBI is to offer extra services with it that would not be possible otherwise. These could be according to A advices on route selection, or just giving the information to transporting (cargo or people) companies so they can better teach/advice their employees to drive. Not just for companies' though, G sees, that transparency and privacy concerns could be smaller if the information would be given to all the customers for driving consulting. Then they would not see that they are being spied on.

B sees driving tips especially helpful when directed at young people. She also sees a possibility of an "emergency call system" meaning that the system would call for help (112) automatically if the car would get into an accident.

One very typical aspect for Finnish customers which came across the interviews, was, that Finns are more eager to insure their property than themselves. A notes that this is very traditional way of insuring in Finland and remembers that currently only 40% of Finns have a life insurance. Simultaneously 60% of that company's revenue is from property and 40% just from car insurances according to him.

One important aspect that came along in insuring is how justice as a value affects the business. A sees, that UBI would offer a more just system for the customer – you would only pay for the risk you cause, whereas now the system is more standardized, meaning you may have to pay for risk you have not done yourself. B agrees with this.

C sees justice as a main value of UBI too. As he mentions, something can be derived from the car the person drives but it is not a direct indicator of risk. With telematics this could be found out, and the price set would be more just. But he does note, that the justice aspect

only occurs if the person is able to alter his/her behavior. In some cases the customer might live in a risky area (Helsinki) and just has to drive much without possibility to minimize driving. Also the technology might be a limiting factor to justice according to him. That is, because to get the risk calculated correctly, every driving situation should be taken into account. However, even if the person does drive an accident without the telematics device on, the insurance still has to cover because of the tight regulations in Finland. So the challenge is, how to make sure that the device is kept on and onboard whenever driven.

F sees UBI as a question of justice too. He looks at it (with his own words) "*from perhaps an ideological standpoint*". He sees that someone who drives wisely and not that much should pay less than someone who drives with high risk and much. He sees too, that with the information gathered from UBi-insurances, the traditional insurance prices could be modified as more just as well. Perhaps justice is a way to convey other aspects than price about the telematics for the customers.

Some of the interviewees noted how their old insurances too are "tailored" for the needs of the customers. A says, that with the obligatory traffic insurance there is not much to do (as of course with the price) but with the additional kasko insurance there is much that can be done. How old you are, how much you drive, do you want your windshield covered, do you use parking garages… All of the risks associated with these factors can be met in the offerings of the additional insurances according to A.

One of the biggest aspect that concern customers about telematics is their privacy. Because of that the companies are worried both the reactions of the legal authorities and those of the customers. A sees that some customers still have the "*big brother watches*" mentality. As we discussed earlier, privacy is an obstacle from legal perspective too. According to A the authorities are not sure where the limits go on privacy ownership and usage either. He ends that in the future automatic vehicles can prove to be an extra challenge to the legislation too.

G mentions the "big brother" type of thinking as an obstacle to privacy too. He sees however, that if the government starts issuing road tariffs and so starts to observe car movements the transition can be smoother than expected, and thus the insurance company would not even have to install any machinery to the cars. He thinks that because of NSA and Facebook privacy scandals, which have had significant media coverage, the privacy issues have been on consumers' minds. However, he thinks that it could be possible for

any insurance company to portray as a more reliable information holder than some other private companies.

E states, that there is much fear around the debate on privacy. He sees, that an insurance company could tackle this by being honest and transparent about where the information is used and what is really gathered. B sees that privacy will "most definitely" be one of the biggest challenges with UBI-insurances. Still, she believes that price will be more important for the customers than privacy in the end. However, "*some people might be ready to pay more for 'a private insurance'".* She ends.

F thinks that "*some customers would not give up their privacy no matter the cost."* He also thinks that there is a possibility of a security breach so their fears are not completely without meaning. He notes, that overall insurance industry is very conservative and legally restricted and no company wants to test the limits of the law, or even go near the limits.

D sees, that the question of privacy is somewhat irrelevant, since driving is not really that private at the moment. When you drive, you drive in public so it is not really that secret. He also points out that one can check from Trafi the driven kilometers and other information of any car. So if the consumers do not really have that much privacy now, how to convey it to them that they are not really losing anything by adopting telematics?

9.7 How the business might change

What was mentioned briefly in the last part of this chapter was the emergence of automatic vehicles and other changes to driving as a concept. In this part we will take a closer look on how the respondents see the future of insurances and driving, and what role do telematics based insurances hold in that.

What came across in the interviews, was that driving as an activity might be changing. Not just telematics based insurances which encourage less driving, but other concepts like app-based carpools and completely autonomous robot cars. Thanks to these and the emerging environmentalism, a car is not necessarily "the thing to have" for many young people of today. Young people of today are, of course, the middle-aged of tomorrow and represent the future of consumption. They do not care as much of the insurance brand as their parents did either and are therefore less brand loyal, meaning a price is even bigger of a factor for them than it was for their parents. Therefore on one hand the young are excellent target for telematics as they have to pay more than older drivers and they care more about

the price as well, but on the other hand, they might not necessarily drive at all anymore. With telematics-based insurances guidance could also be given for the customers and this too would naturally benefit the young more, as they have less driving experience than the older drivers. The installation and use should however, be as easy as possible. The respondents seemed to favor more plug'n play-type of system or smartphone based system over a blackbox-based system, because they are much easier to use and install than the latter. In next generation cars however, the telematics devices will be built-in meaning no effort for the customer and easiness to gather data. A partnership with a larger car manufacturer could prove beneficial for an insurance company making imitation more difficult to others as suggested by Teece (2010), but this kind of deal can be out of reach for the smaller companies. Also, there is no guarantee that the car companies would strike a deal with anyone. Lastly, cars in Finland are on average very old compared to the rest of Europe. Old cars are not as much insured as the consumers might have less incentives to insure them.

What these points tell, is about the fact that the disruption might come from outside. If a company decides not to engage in innovation, but its competition does, as depicted in the theoretical framework of this study, this competition might not necessarily be one that it is used to. As next generation cars will have in-built telematics systems, the car providers can have much power over who gets to use the information they gather. Perhaps some manufacturers could even sell their insurances themselves. At that point the lower insurance margins have come to stay and the insurance companies might not be able to hold to their current profitable business models. So the question here is not just about whether one of the current competitors engages in the new technology, but whether the business environment changes so much, that the competition will come "unexpectedly" from outside.

9.8 Respondents on the changing business environment

B mentions carpooling and "other new possibilities" for transportation as new inventions causing pressure to modernize car insurances. He thinks also, that if the companies can acquire the critical mass (enough volume) the telematics based products will eventually supersede the traditional insurances.

The future of insurance customers naturally lies in the younger generations, which came up in most of the interviews. B states that *"since the young are statistically the most risk-*

prone group they would have the most to benefit from UBI-insurances and from possible additional "driving instructions". She sees too, that the tech savviness of the youth makes them more ready to try new technology, like telematics. As we discussed earlier, in Britain the youth are already the main target of the telematics market.

Despite of this A is skeptical whether or not even telematics will lure the young to drive a car in the future. "*Not necessarily"* he thinks. According to him, overall in the Nordic countries there have been dramatic drops in getting a driver's license when people turn 18 "*it is not the thing anymore*" he says. Green values encourage people to drop driving for mass transportation. Then there are carpools or shared cars. He does not think that telematics would be a sufficient encouragement to get a car for the youth. "*In Finland the willingness to get a driver's license is lowest for the young people in Southern Finland, and as the biggest movement of people is to the south from other parts of the country, this attitude will spread to more and more people"* he ends. Car is itself an expensive thing to buy, and so is the license. And not just Helsinki, but 3-4 different city centers are growing in Finland, which means, that public transportation will be more efficient all over the country in the future. Uber, and similar services seem to catch on too, even lowering the need for a car.

G sees, that "*the younger customers are also less brand loyal then their elders*." Meaning price is even more important of a factor for them than for older generations. Nevertheless, Finland is still "*in a calmer state than other Nordic countries for example",* according to him. What he means by this, is that the retention rates are still higher in Finland than in other Nordic countries.

E then again sees, that the youth might possess the best possibility for a PAYD insurance. He sees that a British-model where the youth do not have any other option besides telematics might prove to be the best choice. There are many unsolved question related to the telematics technology itself too. One thing which came up in some of the interviews was transparency of the measurements in telematics. G sees the mathematical formulas they use to count risk as their "*bread recipe*" or *"a drug formula",* which they can't give up to someone just like that. However, he sees that giving information about the pricing on general level is a good idea. C goes even further by saying that *"in a long term, pricing is the only thing with which the companies compete against one another"*. It cannot therefore be opened completely but to some extent (broader) yes.

E sees, that for guidance reasons, the pricing factors should be opened for the telematics customers. However, again not too specifically but to an extent, as to not give away any company secrets. B would go further and says that "*all the available information should be given for the customers, so that they could change their driving behavior*". Also guidance should be provided according to her.

F sees, that insurance companies give out only the information which they are obliged to give. However, he notes that even currently the insurance companies give out many tips for the customers – how to keep your boat / home / summer house safe. Up to a point the companies should also rely that the customer knows what is dangerous and what is not, he says.

D sees that there is nothing that stops them from sharing the information, but that it is not really a secret either what causes accidents and what does not. This is why he says, that he is somewhat cynical about the customers changing their driving behavior, even if given the information. *"Also the usage of the information is a challenge once the company has it"*. He states. It is true, that big amounts of information can be gathered, but what information is really relevant to the risk? Perhaps only the place and the amount driven are critical factors as discussed earlier.

So there are some issues with transparency and with the information gathered, but how to organize the information gather itself? A sees that previously a black box has been the solution, but now there are more alternatives. Cloud based services are providing many new possibilities.

G says that they have more experiences with Plug-in type of solutions. The most important things should be, whether the device is removable or not, that the customer won't be nervous about the technology or feel distracted. Also the customer should not be able to change how the machine operates. These remarks relate to what we discussed about the customer preference on "not having to do anything"

As C stated, even if the telematics machine is taken off, or no information would be collected, the insurance would still compensate an accident because of the strict insurance law. Also, the quality of the data is important according to him, besides that everything should go smoothly from the customers' perspective.

E notes, that there are many different solutions to organizing the data collection, but the robustness of these solutions is important. The measuring needs to be reliable or the customers will not trust the system either. Black box seems too complicated to him from the customers' perspective, and so he would favor plug'n play or an app-type solution. He sees car manufacturers as one possible partner for the insurance companies in information collection. A notes that *"the geographical differences need to be taken into account."* Someone driving in Lappland is driving with completely different risks than someone driving in Helsinki even if the person from Lappland drives far more. Technical wise A sees smartphones as the future. He sees that transparency too would be easiest to conduct if all the information would be directly in the smartphone. With a box this would be harder to do.

B sees that at the moment the information which can be gathered with outside machinery is too unreliable. She sees though, that the technology develops all the time and that new cars will have these measurements as default option. Getting partners will still be a challenge for insurance companies according to her. Surely, larger companies are in a better position to negotiate deals with the larger car manufacturers than the small companies. Also, who says that the larger car companies would strike a deal with a Finnish company or any insurance company for that matter? Perhaps if the risk levels drop low enough they can organize the insuring themselves.

F sees that it should be decided beforehand how to deal with the customers. He believes, that a separately installed device is the most probable option together with a smartphone. He also reminds of the issues with the privacy laws: "*no-one wants to take any risks with it or even go near the border zones*." Also the devices are not that complicated anymore he adds. He thinks that a partnership for installation could be arranged, but to get car manufacturers open the data they gather to insurance companies is another thing.

So in future cars information gather will be automated. But how about now? A notes that the average age of a Finnish car is 13 years and that after the car gets more than 6 years old people do not tend to insure their cars any more than necessary. *"That is a problem for insurance companies but so is for the government too"* he says and believes that the government has some plans to change the situation as well. However, in the near future things might be very different he believes. Already some larger trucks have devices which take information from the truck that drives in front of them he ends.

As we found out in this chapter, there are legal, and "voluntary" barriers, which keep the Finnish insurance companies from innovating radically, keeping their innovation in very incremental and cautious levels. They do try to differentiate themselves, but only in the narrow space which they all operate. This operation in narrow space, is not harmful but benefits most of the participants, making embracing innovation a more radical choice. The case of telematics based car insurances has been used in this study to point out how the companies look innovation from a strategic point of view. Based on these findings and the theoretical framework constructed in the previous chapter, a theory has been created and will be discussed in the next chapter.

10. DISCUSSION

10.1 A standard business model and the competitive situation of the Finnish insurance market

What we found out in the theoretical framework was, that companies rise and fall through creative destruction (Schumpeter, 1950). This destruction can then be reinforced by disruptive technologies, such as those based on digitalization or big data management. Betting on disruptive technologies is not that simple of a choice as we found out: to fully take advantage of disruptive technologies a company must embrace business model innovation. This can also mean, that the company destroys its current profitable market, leaving a company with a choice to make: to innovate or to imitate? The company must choose whether to actively pursuit innovation or to be prepared to imitate a successful innovation made by their competition. What we also found out, was that regulation plays an important part in all of this: tight regulations mean that companies are unable or unwilling to innovate, because either the regulation makes it too difficult, or the regulation protects their current profitable business model.

Before the interviews with the insurance managers we took a look on how these issues are dealt with in literature about the insurance industry and the telematics based insurances. It seemed from that perspective, that insurance companies are as ready for innovation as any other company. Traditionally the industry has been about price and risk management. For Ferguson (2003) insurance business "is not viable" meaning that, there is generally a

pressure to keep the prices down, both from the market and the regulator. Telematics seems to be a solution to excel in this task, at least according to what Desyllas and Sako (2003) found out about Progressive and what Karapiperis et al. (2015) wrote about telematics in the US. This despite the fact, that Karapiperis et al. (2015) found many issues with privacy concerns and transparency. However, they too saw the technology itself and the business model innovation coming with it as a good solution for insurance companies' future. The problem was just that the companies in the US had not launched the products based on the technology properly according to them. Also, from the private studies we looked, insurance managers around the globe seemed to be ready for the technology. Looking at all this information, the original motivation for this study remains; if according to general and more specific literature telematics-based insurances could disrupt the market and benefit the first-mover why is the technology not yet in Finland?

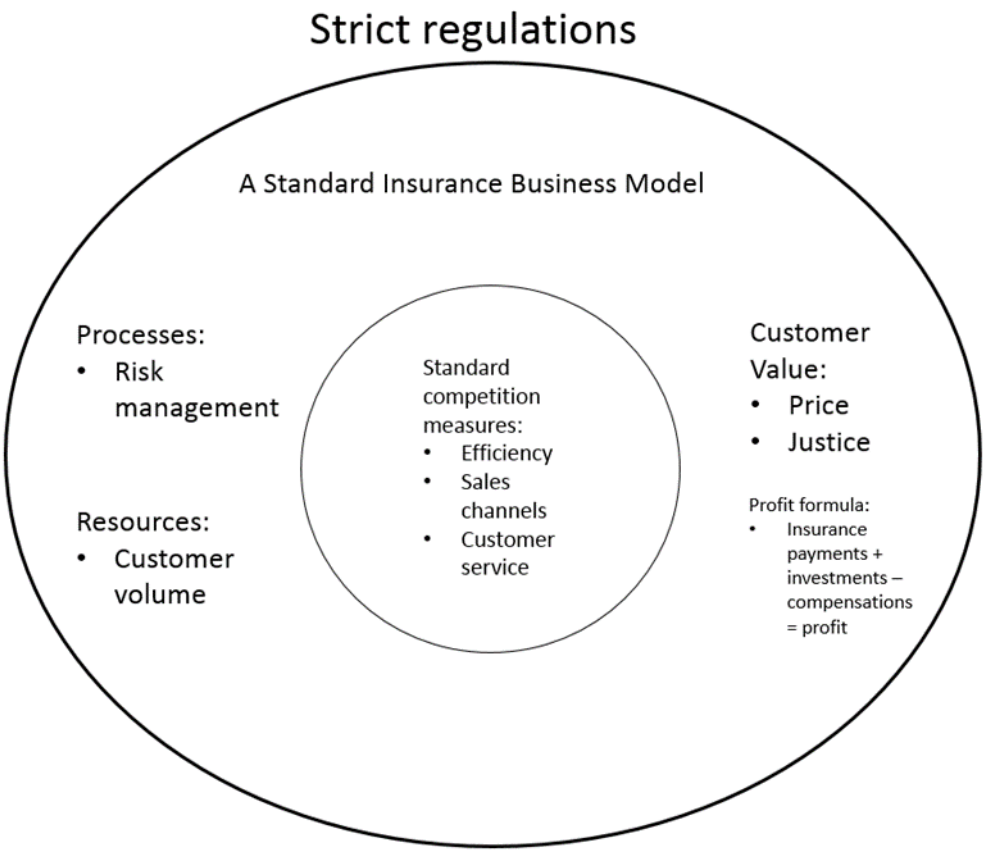

Figure 4:The standard business model of a Finnish insurance company (business model canvas blocs from Osterwalder and Pigneur (2010))

What is visualized in Figure 4 above is a standard business model for a Finnish insurance company. The business models are "standardized" because the Finnish business environment for the car insurances differs mostly in regulation compared to that of most of the other countries. The extensive regulation, was also stated by most of the respondents as a reason why the technology is yet to come in Finland. What we also found out, was that the differences in regulation mainly comes across in compensations; the Finnish traffic insurance is very comprehensive, and according to laws which define it (to an extent in a similar way as Paraskevopoulou (2012) proposes to health industry), Finnish insurance companies must pay in many occasions when their foreign counterparts do not have to. It seems however, that the argument of the comprehensiveness as an obstacle is to some extent incorrect. The comprehensiveness of the regulation means, that the traditional ways of competing in risk management and pricing is even more important to Finnish companies to other, and as we have discussed, telematics seems to be a great way to deal with that traditional problem as it provides accurate information for risk calculations. What is argued in this thesis instead, is that the extensive regulations have molded the business models of the Finnish companies very alike, which then has resulted in similar ways of competing, which also is more or less profitable to all the participants.

The components for the business model (key processes, key resources, profit formula and customer value proposition) are used by many authors, for example Osterwalder and Pigneur (2010). What is illustrated in Figure 4 is that originally the regulation has forced the business model to a certain shape, which then forces a certain type of competition to happen between the companies in the field. The immobility and lack of disruptive innovations in insurance industry in Finland is not so much about the regulation itself but about the business models which favor a similar type of competition.

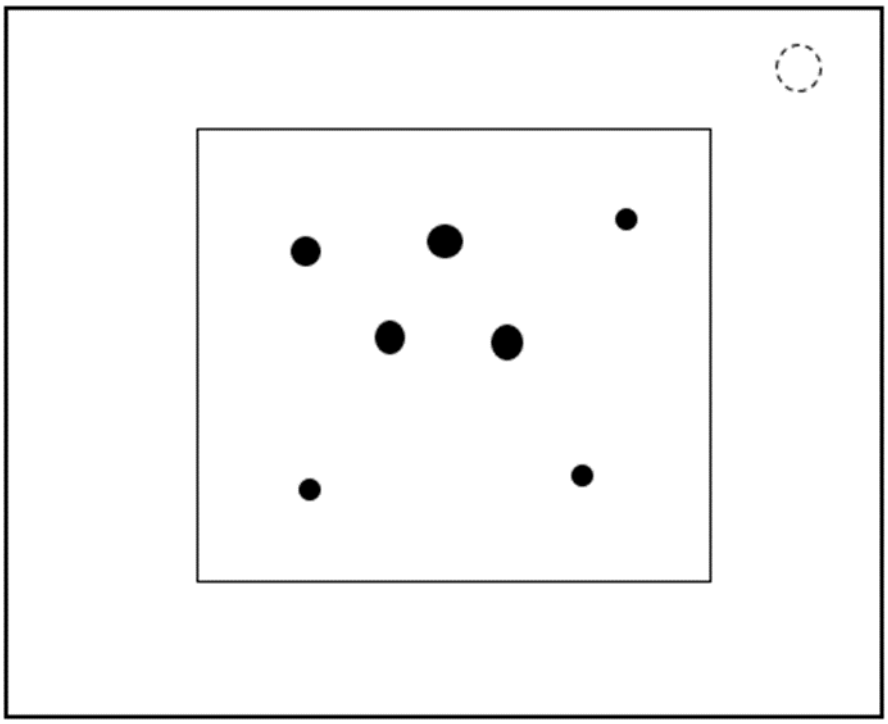

Figure 5: The competitive environment of a Finnish insurance company

To better elaborate and visualize the place of telematics insurances in all of this another model was drawn and presented in Figure 5 above. The outer border of the model represents the legal barrier generated by the Finnish laws and regulations of the European Union. Positioning one's company outside that barrier would be outright illegal. The inner barrier represents the "voluntary barrier" inside which all the Finnish insurance companies position themselves. Inside this barrier are the insurance companies represented as black dots. The larger dots in the middle represent the largest companies whereas the smaller ones represent the smaller companies. What can be noticed is that the larger companies are closer to each other and closer to the center of the region whereas, the smaller companies "test more limits" but still stay inside the inner barriers. The larger dotted circle represents the approximate area, where a Finnish insurance company should position itself in order to embrace the telematics insurances; closer to the edges of the legal barriers but still in the clearly legal sphere but also clearly outside the "comfort zone" of the companies. This is not just about comfortability, but the companies risk destroying the common benefits the companies enjoy inside the inner barriers if they try to test their limits.

10.2 Mechanism from the models and the theoretical framework

Both of these models, together with the theoretical framework, show how companies with these regulatory borders react to new innovations. What is different between the models and the theoretical framework, however, is that whereas the cases looked at in the theoretical framework (health industry), were about a very strict regulation that directly forbids many kinds of innovation, with the Finnish insurance companies the regulation does not directly forbid the new innovations but it has affected the way the companies' business models were constructed. This way the regulation does indirectly affect the level of innovation, but makes the situation somewhat different. The Finnish insurance companies cannot rely as strongly on a presumption that no outside company would come and disrupt the market with the new invention. This makes questions of imitation and innovation more relevant in this case. Cases like the Finnish insurance market, where the strict regulation has had a great role in defining the business models, could seem very similar to the health industry in the way that Hwang & Christensen (2008) presented, but actually have a lot more to do with the case of unregulated businesses and innovation presented by Lucas & Goh (2009). The different to the latter comes from the fact that although the regulation is not as strict as with health industry it still does prevent outsiders to an extent. At the end of this chapter we will discuss other fields, where the model of this thesis is applicable

As was discussed in the interviews, the Finnish insurance laws tend to be more extensive than its foreign counterparts. The Finnish laws on traffic insurance were even described as "the best in Europe" or even the whole world. This is also an important part of what makes the distinction between the inner and the outer borders in our model Figure 3). Whereas the outer borders are the true barriers set by the law, the fact that these laws are *the most comprehensive* laws forces the inner borders further away. Over regulation was said to be one of the biggest obstacles to growth according to the PWC (2015) respondents as well and Ferguson et al. (2003) saw that the fear of government interference drives the insurance companies to keep their prices not viable. Nevertheless, these two examples were from the United States, which is a country where telematics based insurances already exist. It is therefore possible that the Finnish notion, that the regulations are stricter than anywhere else, creates a cautiousness towards innovation. A Finnish company could look to the US (or to any other country for that matter), to see new innovation but then disregard

them as incompatible with the Finnish legislation even if this would not be the case. What this means therefore is that although the outer lines are indisputable as they are made by the regulator, the inner line has been born, not through unanimous group decision, but from individual decisions to position one's company to a safe distant from the borders made by the regulation.

Ambiguity plays a role here too. In some issues, such as privacy, it was not clear to the interviewees where the limits of those laws go. As pointed out by the respondents "*insurance is a business of trust*". Another reason for the companies to position themselves in the middle. The closer the company is to the borders, the bigger is the chance they have to face the ambiguity and in a worst case scenario risk their reputation and brand, damaging their business. A mistake like this could then show others where these ambiguous borders actually go, in a similar way as in the rivalry-based imitation by Lieberman and Asaba (2006). Innovating with large steps could prove to be too radical, destabilizing the profitable structure the companies have created for each other and put the company in risk in terms of legal issues and brand value. Not to mention lost investment costs if the innovation does not succeed. According to the interviews, "the industry moves as one in Finland", and so as one of them is doing good, then other are probably as well. This means, that as long as everyone stays inside the inner borders, the good or the bad circumstances will help and hurt the companies more or less equally. If the company would change its position through innovation, this could unbalance the current (profitable) state and lead to smaller profits. Many of the participants inclined, that the combined ratio of all the companies has been steadily growing in the recent years strengthening the notion that the companies do not necessarily want to shake up the current state of things. Car insurances are the "flagship" product for the companies as well, which means that innovating with them might be especially destructive. It would not be about testing radical innovation for a small fraction of the business like a medical company testing a cure for a rare disease, but in fact about changing the whole business. Competing in the smaller and narrower space inside the inner borders means that the insurance companies compete with the same products in the same ways: risk management and effective processes are the core for all the companies. These are the traditional ways of competing for insurance companies as was mentioned by Bickley (1967) for example.

Understanding the difference between the immovable and self-set barriers (outer vs. inner barriers) is important, but it is also important to understand how the business models' of

the companies have been built (Figure 5). One thing the interviews revealed was, that all the Finnish firms strive for profitability with their insurance margins. Though Ferguson et al. (2003) meant when writing that "insurances cannot be viable", that the price cannot be fixed and same for all, forcing the insurance companies to excel in pricing and risk scoring, they still incline, that it is "natural" for insurance companies to sell the insurances in non-profitable prices than profitable. The companies can always invest the revenue they get from the insurances (an integral part of insurance business, as brought up by Desyllas and Sako (2003), so non-profitable insurances can lead to profitable businesses anyway. However, in this case what was meant was, that in Finland the companies strive for profitability even if taking only insurance revenue into consideration, despite "the competition being intense" (is it?). As mentioned, risk management and risk scoring are nevertheless very important to maximize the said profits by minimizing compensation payments. The companies could use telematics to do these tasks more efficiently, as presented by Karapiperis et al. (2015) and Desyllas and Sako (2003). They could also increase customer value in terms of price (the most important factor for them) and in terms of justice. However, with the profit fomula of Figure 4 an important dilemma of telematics based insurances comes across: the companies want to maximize their revenue and simultaneously minimize the compensations paid. However, large revenue usually means large compensations and small revenue equals small compensations. If the company could cut the amount of customers who get into serious accidents with the help of telematics, they would not justify larger payments anymore either: although there would be less money going out of the company there would be less money coming in as well. Then again, in Finland individual accidents can cost significant sums of money for the company: one accident paralyzing several young-people can mean compensation payments lasting for decades for the company and eventually reaching millions in total compensation sum. This demonstrates how the regulations are connected to the business model and therefore to the competition practices of the companies.

A couple interesting notions, which came across in the interviews, were the "inevitable coming of the technological change" and the advice that "one should not stay motionless". This should be considered from the perspective of rivalry-based imitation by Liebermann and Asaba (2006). As we discussed the companies have created themselves this "safe haven" for competition, where they all move together: for better or for worse (and usually for better). However, what slows down the innovations with rivalry-based imitation, is that

the companies do not want to take chances on either a) using resources on "wrong" type of innovation or b) "ruining" the current profitable status quo in the competition, but if there truly is inevitable technological change coming, it will shake up the status quo anyway. This implies that if this notion is shared among the companies widely (as it seems to be) they are cautious about option a) as well as option b): using their resources to the wrong type of innovation. Simultaneously the companies are therefore very keen on the current system, but seem to be sure that there can be an outside force that could tear it down.

If the companies are truly waiting for a technological change to come, it might explain as well, why they are not too eager to innovate: as Pepall (1997) stated, if the innovator and imitator are close to each other, imitating is easier, at least if there are no patent protection or co-operative alliance on which the innovator can rely to. Also what Aghion et al. (2001) wrote about incremental rates of innovation relates to this: if the incremental rate of innovation is small, it is easier for imitators to follow. So from these points comes the following situation: there are a group of companies operating with similar tactics in a same business environment. If one company decides to differentiate itself using innovation, it needs to make sure, that the incremental rate of the innovation is high enough so that others cannot quickly imitate. However, if it does this, it might use its resources poorly (chances to which are higher the higher the rate of innovation because of rising levels of ambiguity), of which the others could learn from.

If a major technological change might be happening it could be the best to wait and monitor what others are doing until the situation is clearer or until someone else innovates and fails or succeeds. From this perspective it makes sense why the companies are located in the middle and fairly close to each other in the business environment depicted in Figure 5, even if they anticipate some sort of eventual technological change. This might not necessarily still be the best tactics, as we keep in mind the follower's dilemma presented by Semadeni and Anderson (2010): imitation is not always successful. One cannot simply assume that, if another company succeeds in innovation his company will do the same by imitating the first mover. Also as Jenkins (2014) proposed, imitation is many times considered to be "the easier choice" but that is not necessarily the case, and imitating will too require some innovation in form of new performance features. Although it is logical how the companies are positioned in relation to teach other in the Finnish insurance market, it is not necessarily seen as the best choice (at least forever) for individual companies in this study.

So ways for these companies to differentiate themselves against one another (presented in Figure 4) are mostly the same: different focus to sales channels, different focus groups, additional services and innovations. Sales channels focus means, whether or not the company focuses on physical locations, phone lines or online services. Different focus groups can mean for example an "entrepreneurial focus" or "trade union" focus to name some examples. Additional services mean mostly extra securities which other companies' insurances lack. An example of this could be a rental-car service in case of a car-breakdown which is offered by some, but not all companies. Innovations then again were hardly seen as a way to differentiate or to compete against others. Those innovative measures which have been taken into use and mentioned by the interviewees were mostly from the health insurance sector. These included an insurance company owned hospital, usage based-health bracelet and a small new insurance company which pays customers a fixed amount of compensations, no matter if there are other insurances or conditions. As discussed earlier, health insurances are a far less contested market than car insurances.

There are two important aspects to be understood from these differentiation methods. Firstly, the companies differentiate themselves almost exactly in the same measures and in ways which are not very radical and easily imitated by others, for example by widening (or narrowing) sales channels, improving customer service or improving efficiency. This shows, how the companies are competing in a narrow space as we discussed earlier and what is depicted in the models depicting the competition (Figure 4 and 5). Because the health sector is less contested and there is much room to operate for all the companies, it is easy to see, why they are ready to try more innovative solutions in that field. Then again, these innovative solutions in the health insurance field are not disruptive as innovations regarding car insurances would be as we discussed earlier.

Big data and information technology are emerging in ways which might transform the way we do business decisions as McAfee et al. (2012) describe. Porter (1985) noted, that technology can be used as a competitive advantage if it has a significant role in "determining cost, position or differentiation". All of these would seem to hold true with telematics. However, in addition to the fact that car insurances is a bigger and therefore riskier part to "shake the business", Padgett and Mulvey (2007) note that in terms of ROIC adopting new technology does not automatically mean success. They did find however, that adopting new technology did have an effect to customer value and firm positioning. This leaves an insurance company decision maker to a tough situation: to embrace new

technology might be embracing a long-term success, which would not be realized in the next few years. That would be a difficult decision to make for any CEO, but especially for a publically traded insurance company CEO. How to explain to shareholders an investment, which might not realize in the next few years and would threaten the current business model, meaning a threat to the investors' dividends and / or share value of their stock? This notion too might explain why the companies move fairly slowly despite the "inevitable technological change" they see to come.

What we learnt about the insurance customers, is that they are very price sensitive and that it is difficult for the insurance company to affect their perception of the company since they are usually only in contact with the company when they buy an insurance or when an accident happens. The companies strive for long-term partnerships and so do many of the customers too. Also, what is most important about the brand of the company is to understand that "insurance business is a business of trust". According to Teece (2010) any new service or product innovation requires business model innovation, and the new business model should then again be built around the customer needs. From telematics perspective the issue would seem to be clear: customers want lower prices, and additional offerings can please them when something happens. Telematics can offer these both, so offering a UBI-based product would seem like a great solution.

There is another side to this however: laziness is a driving factor for at least some of the insurance consumers as we learnt. Why to offer them a product which might increase their trouble and interaction with the insurance company, when they seem to want a long-lasting "quiet" and cheap partnership with the companies. This is an important question to answer when making a decision concerning the technology. As O'Connor and Rice (2012) and Chesbrough (2010) put it, designing a business model is at least equal (or more important if asked from Chesbrough) in importance with developing the technology. Just looking at the properties of telematics based insurances for example, and making a decision based on those is not enough. All aspects of business model and especially the customer value should be considered and evaluated in order to decide how to proceed. As Chesborough and Rosenbloom (2002) remind though, customer value can be difficult to estimate beforehand and no business model should be carved in stone but should adjust as time goes on and the market develops. So if the insurance companies are uncertain on whether or not the new telematics-based business model will work or not, they should keep in mind, that for better or worse it should still be adjustable. The situation here reminds of the Hwang

and Christensen (2008) and Herzlinger (2006) example of the health care industry. It is clear for the customer value that they want more efficient and more accessible health care services, but for companies to change their system better to add up with this need, can be very difficult, or something they do not want to do, because it would interfere with their current business model. The customers then again, do not have a choice until a new player comes to field or forces one of the older players to change the competition. In insurance industry too, the customers want a just and cheap system (possibly provided by telematics) but the insurance companies do not necessarily want to or can give it to them. This leaves the customers to the background, and the change will most probably come from outside in a way or another.

In the right upper corner of Figure 5 is a dotted circle. It represents the move the insurance companies business model face if moving to telematics: a legal venture, but still closer to the legislative borders and much further from the current position of the companies. This raises a question: if telematics-based car insurances could be legal, and have been an example of successful business model innovation for Progressive (Desyllas & Sako, 2013) and a huge possibility for the whole American insurance sector and consumers (Karapiperis, 2015) why is the innovation outside of the companies' comfort zone? Well, firstly whereas Desyllas and Sako (2013) saw that the underlining principle of insurance business is shifting from "taking advantage of economies of scale" in to rewarding the good customers, the interviewees of this research then again, saw that telematics makes little or no change to the underlying principle "many pay for the damages of the few". Another thing is, that both Desyllas and Sako (2013) and Karapiperis et al. (2015) studied the US market, whereas the respondents of this study felt negative towards, taking advices from abroad. Even European countries where telematics is in wider use, such as Italy and the UK, despite being geographically closer and EU-member states, were considered as ill-fit examples for Finnish insurance companies. Mostly this was because of the Finnish law which is considered most extensive, than the legislation of those countries, but also the size of the market. In countries like Italy or the UK not to mention the US, the population is much larger than in Finland. If the perspective towards new insurance products is, that one needs a critical mass to keep it up, then the innovation should be for the crowds and not just a niche-product or the invest will go to waste. This logic seemed to leave the respondents with a thought that the change would not come to Finland unexpectedly. This is very logical if we remember what Von den Eichen et al. (2015) brought up; to be

successful one needs to be prepared to change the whole culture of the company and to be successful one must be confident. This is hard to achieve on new ventures if one is already operating a profitable business.

Another issue that the companies consider is, that who would use the product and benefit from it the most. The obvious answer would be the youth, since they are the most price-sensitive, the group that has to pay the most at the moment and are also the most tech-savvy. According to one of the respondents the youth are also the main and only target of telematics in the UK and according to Karapiperis (2015) the biggest benefiter group in the US as well. However, the respondents see, that the Finnish youth does not necessarily want to have the trouble of getting a driver's license, not to mention buying a car. Environmentalism, urbanism and technology all affect this: driving is not necessarily perceived as something "one needs to do". As the population in Finland concentrates to larger cities, mass-transportation becomes cheaper and better, reducing the need for a self-owned car. Also the new technology and solutions for diving like Uber and other carpooling systems, even self-driving cars, which are not in wide use by any standards, but have already hit the road, all accelerate this change. It would seem possible, that even if the competition dynamics in the Finnish car insurance does not change, the disruptive change could come from a completely different industry; if cars or transportation as a whole changes rapidly, that would at the latest force the companies to change their business models. Nevertheless, customer behavior does not seem to be the most important issue in driving towards telematics or away from it. Still, if a telematics product is launched, it will be important to analyze to get the most out of the product.

This far in this chapter we have discussed about the models constructed on the basis of the literature synthesis and the findings of this research. We have also discussed the reason why the car insurance market in Finland is constructed like it is, and what forces affect it. In the next part of this chapter we will discuss suggestions for the insurance companies based on these findings.

10.3 Suggested way to proceed for a Finnish insurance company

The current strategy of the companies "staying put" and waiting is not necessarily the worst strategy, as long as they are also prepared for the upcoming technological changes. The current form of competition depicted in Figures 4 and 5 resemble the starting point for

rivalry-based imitation as Lieberman and Asaba (2006) depicted it. It is true, that there is much ambiguity and concern over the telematics-based industry, even if it is completely legal, and there is basically no incentives for the companies to "stir up" the current competition: they are all doing well, and for all of them car insurances are an integral part of their overall structure. However, many of the respondents did not see the situation as depicted in this thesis. They saw that the companies are "very different" to each other or "compete with different strategies". What is argued in this thesis is that they are in fact not, and that to be able to plan for long-term success this should be understood. The situation resembles a form of game-theory, where to not act (invest to telematics) leads to definitive short-term profit, whereas acting can lead to several other options including smaller, larger or equal profit with little or no amount of information on the probability of those possibilities. However, there is a chance nevertheless, that an outsider will be the first mover in this field. A party which does not benefit from the current status quo. This could be for example a foreign insurance company, already equipped with the right partnerships and experience from larger markets, where the technology is already in wider use. Or, this could happen through a party with no previous affiliations with insurance market (such as a car manufacturer). Also other disruptive innovations on cars might change the competition before telematics has been applied. To help consider these challenges we will discuss three concrete points to take into consideration for any Finnish insurance company, illustrated below.

a) Make tests on telematics	• Being prepared to innovate • Being prepared to imitate • Minimizing ambiguity
b) Make deals and form connections with future stakeholders	• Making imitation harder for competitiors • Making first-mover advantage more plausible
c) Diversify away from car insurances	• Lessening the reliance on car insurances • Gaining new less contested market share • Preparing for changes in the business environment

Table 4: Recommendations for Finnish insurance companies

A) An Insurance company should be prepared by making tests on telematics-based insurances. As we have discussed on the findings of this thesis and about the literature over business model innovation, it is very hard or near impossible to tell beforehand how the consumers' will feel towards the product, or how much trouble are they willing to do to reduce their payments. Also, as proposed by the findings it is not impossible that an outsider would enter the Finnish market with telematics based insurance products. As stated in the theoretical framework, question about imitation will become very current for the companies after one of their competitors or an outsider embraces the innovation. Also, as written by Chesborough and Rosenbloom (2002) for example, flexibility and continuous analysis is important after the initial launch. Surely, doing initial tests can help to understand how far the customers are willing to go themselves to reduce their payments; whether the driving behavior truly changes and how much trouble they are willing to go themselves, helping to conduct the ongoing analysis after a decision to imitate would be done. Also the tests would tell more on how to plan risk scoring: according to some of the interviewees, the amount of driving and the place where the driver drives are the only factors that truly matter.

Perhaps, if that holds true, a simple plug-in device or an app, could measure enough information instead of a heavy and complicated black-box. These and other technical questions can only be found out only by doing tests. In a nutshell: one of the insurance companies can decide only from their own part whether or not to sell telematics-based insurances. As long as the market moves as one and is beneficial for the participants they can be fairly sure, but not completely sure, that their direct competitors will not engage in it either. Outside the industry or foreign competitors then again, do not benefit from the current situation, and for them taking some market share with the new products or disturbing the current profitable state of competition would be a possibility and not a threat to their current profits. None of the companies can therefore completely "lay back" but they should be prepared to imitate if their competitors decide to take the technology in use. As Jenkins (2014) proposed imitation requires some form of innovation as well to be successful. To know what innovative features are needed, the company is surely better off after conducting some tests.

B) An insurance company should make deals and form connections with future stakeholders in the field of telematics. Insurance companies are experts in risk management, risk scoring, efficient underwriting and investing as efficient partnerships

could secure that the innovation would be harder to imitate as suggested by Teece (2010), Jenkins (2014) and others. Securing right partnerships would also benefit the company if they were the first to innovate, maximizing the possible first-mover advantage. The insurance companies are not experts in technical issues of telematics. The important stakeholders in this case would be at least the manufacturers of the telematics devices (plug-in/app/black box) and car manufacturers of next generation vehicles with in-built telematics. Both of these groups should be contacted. Especially with car manufacturers a secured partnership would also reduce the risk that they would become a new competitor meaning a reduced risk of outside competition in the field of insurances. .

C) An insurance company should diversify away from car insurances. This recommendation rises from the finding that currently the car insurances are the most profitable products for the companies and looking for new value in that field could harm the profitable business model as discussed. In other, less contested fields, finding or creating new customer value in the way as discussed in the literature synthesis of this thesis (for example by Kim & Mauborgne, 1999 and Chesborough, 2010), would not harm the whole business model of the company, but give possibilities to rise their market share. As we have discussed, the role of the car is uncertain in the coming decades. In short-term, car insurances will surely stay as the main source of revenue when compared to other insurances, but in the long-term it is impossible to know what is going to happen. As explained by the interviewees, the youth already has a different attitude towards cars than the previous generations and automated cars are not a fantasy but a reality, as the partly automated Tesla's have hit the roads. So there is a possibility that the older generation does not want to switch normal insurance to telematics and the younger generation does not get a car as probably, and finally an automated car will enter the market with such low risks, that the manufacturer can carry the risk themselves or the premium for the companies will get very low. Although it is hard to state the probability for this event, it is clear that although car insurances were important to companies already back in John S. Bickley's writing of "an overview of the insurance market" in 1967, it will probably have a very different role for them in the coming decades. Health insurances for example are still much less uncontested than car insurances in Finland and as many of the companies have already done, they can try to use innovative measures to conquer more ground in that field..

These points naturally have their limitations. For example negotiations and partnership deals with foreign companies might be easier to do for larger companies than smaller ones.

However, the points underline the overall situation and the most important point in this thesis for insurance companies in Finland: that they are, despite being more isolated than some other businesses, not immune to megatrends such as digitalization and globalization. New applications of technology can change the competition from the within but also bring new contesters to the race. As we have discussed in this this thesis, the business models of the companies have been molded the way they are by regulation and then these models have molded the competition the way it is today. For a company that benefits from the current system (basically all of them) to invest in disruptive technology poses a risk. However, not to be prepared to an outside change, either in a form of a new competitor, another company changing their business model, or disruptive transportation technology, is an even greater risk. The theory created in this thesis in not just applicable to this narrow field but can help to understand other similar situations, which we will have a closer look on in the next part of this chapter.

10.4 Applicability of the mechanism to other fields

Naturally one field where the theory made in this thesis could be suitable is the health industry which was already discussed earlier in this thesis. What is different about health industry is, that the regulations are possibly even more binding then with insurances. What was argued in this thesis was not that the regulations would be so tough that it would give no possibilities for a diverse range of business models but it encourages a certain type of business model which then creates certain kind of competition. With medical practices and especially with medicine the restrictions can be even greater. Still, as with insurance business, two questions remain for the healthcare industry; to what extent does the regulation really define the business models, and to what extent do the managers of the company want to keep up the current profitable status quo? To study this, the models founded in this study would surely prove to be helpful.

Another example could be the Finnish taxi industry. Regulation forces the drivers and the taxi entrepreneurs to get permits and licenses to operate. The purpose of this is to limit the operators so that they can be observed and the customers guaranteed a good service. Simultaneously this does raise the prices as well, making the business more profitable for the taxi entrepreneurs. For many years the system did work to an extent; hailing an illegal cab was maybe cheaper, but there was no guarantee of quality. That person could be just anyone, whereas a legal taxi is more or less authorized. However, as disruptive

technologies like Uber have arrived, the situation has reversed from customers' perspective; the "illegal taxis" are no more just random people from the streets, but the customer can actually see whether other people have validated the driver or not using the Uber's 5-star rating system. The consumer can then accept or decline the Uber based on its rating. Normal taxi lacks this system making Uber better not just in terms of price but in customer value as well. This puts the Finnish taxi-companies in a difficult spot; should they try to lobby as hard as they can to keep the old profitable system, which then again could be crumbling away anyway (if Uber in Helsinki is a sign) or should they embrace the disruptive technologies and stop lobbying for the restrictive regulations? Again, in comparison with the situation observed in this study, the restrictions are stricter with the taxi-industry than with insurances. With insurances the companies just decide not to engage in anything too drastic or to shake up the profitable competition dynamics as we have observed, but with taxis to work without a taxi permit is outright illegal (Kammonen, 2016) and to get a permit might prove difficult as well. Still, the underlying principles are the same in both cases; to be prepared, to actively change or to stick in the past are all possibilities, and to evaluate the possible consequences the companies operating in these fields need to understand the regulatory forces affecting their business models and competitive measures.

Finally, an example could be the banking services of consumer clients. The regulation here is less clear to grasp than in the previous examples, but sure it can be agreed that there are barriers of entry to create a consumer bank. Not just in terms of regulation, but in terms of volume like with insurances; an insurance company needs the many paying customers to pay the damages of the few. A bank needs many deposits to loan money to them and others (in basic principle). However, now as companies like Facebook are entering peer-to-peer payments (Economist, 2015), and bitcoin and crowdfunding services are becoming popular, the consumer banks too must look themselves too the lenses of this regulation-business model–competition cycle that has been studied and presented in this thesis. To simply keep up from the old business model without understanding the reasons for its restriction and the possibilities of its future could prove to be a great mistake.

This study was conducted because from a research motivation stemmed a research question that needed to be answered. The question would have been impossible to answer without a new mechanism which was created in this thesis. This mechanism is not, however, just a mechanism to solve the particular question on the Finnish insurance market, but is in fact a

multi-purpose tool that can be used in other environments as well as demonstrated in this part of the study. In the next chapter we will conclude the thesis.

11. CONCLUSION

11.1 Research summary

The main goal of this research was to find out answer to the research question "how slow-moving or traditional industries and companies react on disruptive technological advancements?" through the lenses of telematics car insurances and the Finnish insurance market. What was found out was, that the slow-moving or traditional companies can feel distrust towards possibilities offered by new technologies, as they do not want to risk their current profitable business models. This feeling is emphasized if the companies feel protected because of barriers of entry from regulation.

To help the reader to understand what questions the solving process of the main research-question holds three sub questions were created as well. These are a) how are the business models of regulatory bound companies constructed? b) How does the similarity of business models affect competition? And c) How do slow-moving or traditional companies react to the innovativeness of their competitors? We know now, through the literature review and the findings of this study, that regulation can affect the business models of the companies to be alike. This alikeness of the business models leads to similar types of competition, which then means that when it comes to innovation, imitation might be the main objective for these companies. From those answers to the sub-questions the answer to the main research question is possible to be answered.

By studying literature on new technology as a competitive advantage, business model innovation, regulation as an obstacle to business model innovation, and literature on the relationship between imitation and innovation, it was possible to generate a theoretical framework depicted in the Figure 2. Through this synthesis, we could understand the questions companies face when encountering new disruptive technologies. It could be noted, that companies with profitable business model, and especially with regulatory protection have very little incentives to engage in new innovations or business model innovation. If the regulation does not rule innovations out entirely, this leads to a situation

where the company needs to focus on questions related on imitation, in case its competitors or an outsider will enter the market with the new technology.

We then compared the theoretical framework to literature about the insurance business and the telematics based insurance for two reasons: firstly, to understand some universal principles on insurance business and secondly, to understand what makes the Finnish insurance market unique. What was noticed, was that according to the literature telematics-based insurances would be a suitable way for insurance companies to find or create value for customers, and that the companies would not face the setting proposed in the theoretical framework. After going through the findings, it was discovered, that the Finnish insurance companies share many similarities with the cases explained in the insurance literature: price and risk management are main issues for all and the management and the customers shared similar ambiguities over the new technology. What made the Finnish insurance companies different, and what made all the difference in this study, was, that the Finnish regulation is tighter than in other countries, and most importantly, very much perceived as such. Another main difference was, that the Finnish companies are profiting from the current state of things, meaning there is less incentives to escape or change the current competitive situation and more incentives to conserve it as long as possible.

The research in this thesis was done with seven interviews with insurance managers from different insurance companies in Finland representing almost all of the Finnish car insurance market. The data-analysis of those interviews was done through the principles of grounded theory. The main categories that rose from the interviews were the regulatory boundaries of the Finnish insurance market, similarities in the companies' business models and differentiation, customer behavior and the changing business. Based on these findings two models were constructed, illustrated in Figure 4 and Figure 5. The purpose of the Figure 4 is to illustrate the similarity in the business models: the main blocs for all companies were their sales channels, the efficiency in same processes and the price of their products. Figure 5 then again illustrates the competition dynamics of the companies: all the companies are apart from each other but still inside a relatively small area. To engage in telematics would mean breaking the current beneficial dynamics between the companies.

Although the answer to the research question was found out with the help of the context of the Finnish insurance market and telematics insurances, the goal was not to answer just why telematics-based insurances have not yet arrived in Finland, but to also bring up a

mechanism that could be applicable to other similar situations in other fields of business. The findings of this study together with the theoretical framework enabled us to widen the mechanism found to other fields, where regulation is a strong force affecting the creation of the business models too. The examples named were the health care industry, Finnish taxi-industry and consumer banking.

11.2 Limitations of this study

This study answers well how slow-moving or traditional companies see themselves in relation to disruptive technologies, and the mechanism that is formed with the findings from the Finnish insurance market helps to understand and explain other situations where regulation or other external force plays a role in business model and competition definer. Still it should be noted that there might be issues about the Finnish insurance business that limits the scope of this study. One aspect could be that the respondents did not want to share everything with this study, such as information about tests on telematics or about future product launches. It was also agreed with all the interviewees that on basis of anonymity and competitive advantages, anything about secret project developments or tests would not be asked, nor were the respondents expected to tell anything about them. Also in this study, the role of managerial decisions is emphasized over customer behavior. All the evidence that has been gathered here does support this choice as it is known most issues with customer behavior are unknown until the product is actually launched (for example Chesborough, 2010). Some other researches could however look this study more from a marketing than a strategic decision-making standpoint.

11.3 Possibilities for future research

One aspect, which was out of the scope of this study, but would surely be interesting to look closer, is the relation of the HR-policies and strategies of Finnish insurance companies. The questions for the respondents were designed in this study so, that it would be possible to find out as much as possible about their business models and the business environment of the Finnish insurance market. One issue, which was realized later, was that albeit the interest of this thesis was about the competitive advantages the companies had in comparison to each other, and what they considered to be the important resources in creating this advantage, none of the interviewees mentioned their personnel. Customer service did came up, but not as in “our customer service representatives are great” but as in

that the service itself is great – implying the importance of processes and policies over people. Some also brought up the "simplicity" and "traditionalistic characters" of the business. As said, it is impossible to say anything about this based on the evidence that was gathered for this study, but it would seem like many of the companies see that "the business makes itself, as it always has" and not the people. If this holds true, it might also have an effect on the way the companies view innovations and the renewal of the business. An insurance company does not own oil-fields like an energy company or airplanes like an airline nor any other very expensive fixed assets, so one would expect the employees to be the most important resource for them, and their HR-policy to be one of the competitive advantages. If it were that this is not the case, this would surely give an important and intriguing topic for a research.

Another possible research could be some other conservative sector of business which does not necessarily embrace change (for example one of the industries were the scope of the theory of this study reaches). For example, a similar study than this could be made about the Finnish consumer banks to see how they are prepared for the future trends like cashless environment, paying through social media services, bitcoin payments, crowdfunding or the possible declining trust for hedge funds by the millennials. Banking and insurances share similarities in that both industries are very old in their basic nature, but that the business environment around them is changing fast.

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APPENDIX

Appendix 1: Interview outline

Haastattelu nauhoitetaan muistiinpanotarkoituksessa. Sekä vastaajille, että näiden yrityksille taataan anonymiteetti tutkimuksessa.

1) Kerro itsestäsi, kuka olet ja mitä teet?

2) Miten kuvailisit vakuutusalan kilpailua Suomessa yleisesti tällä hetkellä?

3) Pitävätkö seuraavat väitteet mielestäsi paikkaansa (Kilpailusta Suomessa)?

    a. Onko vakuutusyhtiöillä painetta pitää hintoja ”liian alhaalla?”
    b. Onko vakuutusala Suomessa saturoitunut (matured)?

4) Mikä luo teille eniten kilpailuetua suhteessa kilpailijoihinne (resurssit)?

5) Mitkä ovat mielestäsi suomalaisen vakuutusyhtiön tärkeimmät prosessit (toimintamalli)?

6) Miten yhtiönne tekee tulosta?

    a. Yhtiönne yhdistetty kulusuhde oli viime vuonna x. Mitkä toimenpiteet ovat mielestäsi tärkeimpiä tämän parantamiseksi?
    b. Onko yhdistetty kulusuhde ylipäätään hyvä mittari vakuutusyhtiön suorituskyvystä?

7) Mikä on sinun mielestäsi asiakkaan saama hyöty hänen ostaessaan teiltä autovakuutuksen?
    a. Mitä emotionaalisia ja funktionaalisia elementtejä liittyy autovakuutuksen hankintaan?

8) Onko suomalaisilla vakuutusyhtiöillä tendenssiä kopioida strategiat suhteessa toisiinsa (markkinoiden saturointi)?

    a. Pyrittekö katsomaan omaa liiketoimintamallianne ”ulkopuolelta”?
    b. Katsotaanko mallia ulkomaisista vakuutusyhtiöistä?

9) Mitä ajattelet: ovatko suomalaiset vakuutusyhtiöt valmiita kokeilemaan täysin uutta liiketoimintamallia, joko muuttamalla vanhaa tai testaamalla sitä vanhan rinnalla? Onko sinulla antaa esimerkkejä?

10) Kuinka tuttuja sinulle ovat telematiikkaan perustuvat vakuutukset PAYD, UBI yms?

11) Mitä hyötyjä näet asiakkaan kannalta PAYD-vakuutuksissa?

    a. Entä vakuutusyhtiön?

12) Mitä muutoksia nykyiseen liiketoimintamalliin koet tulevan?

13) Mitkä koet suurimpina haasteina telematiikkaan pohjautuvien autovakuutusten käyttöönotossa?

    a. (Teknologian järjestäminen)?
    b. (Kilpailisiko uusi tuote liian vahvasti vanhan kanssa?)

14) Miten suomalaisen vakuutusyhtiön sinusta tulisi tuoda tällainen tuote markkinoille?
    a. Nopeus (first-mover advantage)
    b. Markkinointi
    c. Tuote: suomalainen vai ulkomaalainen palikka

15) Omasta mielestäsi, kuinka valmiita suomalaiset kuluttajat olisivat tälläiselle tuotteelle?
    a. Yksityisyydensuoja

b. Maksaminen – pelkkä alennus vai alennuksen tai noston riski?

16) Jotkut tutkijat ovat syyttäneet Yhdysvaltalaisia vakuutusyhtiöitä siitä, etteivät ne ole julkaisseet UBI-tuotteitaan tarpeeksi läpinäkyvinä: miten kuluttajat voivat muuttaa ajokäyttäytymistään jos eivät tiedä mitä heistä mitataan? Koetko, että Suomessa tällainen tuote olisi mahdollista julkaista läpinäkyvänä?
    a. Mitä tietoa voidaan antaa asiakkaalle?
    b. Kuka omistaa tiedon viime kädessä?
    c. Luuletko, että lainsäädäntö on Suomessa valmis tähän (uuteen teknologiaan)?

17) Lopulta: Koetko teknologisen muutoksen uhkana vai mahdollisuutena?